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WHAT HORSE FOR THE CAVALRY.

By VARIOUS OFFICERS.

Brigadier General William H. Hay, National Army:

I FAVOR a service horse between 15–1 and 15–3 provided conformation, etc., are satisfactory. My preference is based on experience in the field. Occasionally horses as small as 14–3 of exceptionally good conformation are found which will carry the weight of rider and pack and are also heavy enough to meet all the requirements of a good service horse. As a rule, however, a horse smaller than 15–1 and weighing less than 975 pounds, will not meet all the requirements of the cavalry service though they might be all right for mounted infantry.

I have had no experience with the Arab type either as owner or as observer.

I would be satisfied with either of two types of horses. First, the three quarter bred of the Virginia hunter type out of any good sound stock.

Second, the three quarter standard bred.

My preference for these two types of horses is based on long experience in ownership and observation of both types.

Both types have the build, weight, speed, endurance and hardiness necessary to stand the wear and tear of field service. They are both free from the defects of the pure thoroughbred or standard bred.

I have owned and ridden a thoroughbred Virginia hunter under field conditions, and have observed a large number of thoroughbreds, mostly of the racing type, under the same conditions. Horses of the thoroughbred race horse type are not fit for field service. They are high-strung, sensitive to extremes of weather, prone to injury and require full rations. They do not know how to forage for themselves. So far as my experience and observation go, I would condemn them as a type absolutely for field service. The Virginia hunter— I am now speaking of the best type—is an excellent service mount except that they require more forage, on account of their size, than other horses and they cannot remain fit for service on short rations.

The question of the proper type of horse for the cavalry service goes deeper than the mere consideration of the horse itself. We cannot intelligently discuss the best type of horse for cavalry until we agree upon the requirements that the animal will be called upon to fulfill. There is, I regret to say, a good deal of what I consider heretical opinion still held by many cavalry officers in regard to the future role of cavalry.

Some consider that it is in reality mounted infantry; others would be scandalized if accused of holding such an opinion but are so obsessed with the idea that the cavalry charge is a thing of the past and that cavalry will always act dismounted that they in effect would reduce the role of cavalry to that of mounted infantry. If such views are to prevail then the only function of the horse is to carry his rider and his pack to the point where dismounted fighting is to take place. The true cavalry doctrine, in my opinion, is this:

Our cavalry must be trained to be the equal of the best cavalry in mounted combat and to be as good in dismounted combat as the best infantry.

The requirements of cavalry training fix the requirements the cavalry horse must fulfill. The principal of these are:

(*a*) Ability to carry the weight of rider and pack over long distances.

(*b*) Ability to move at speed for short distances, to surmount the ordinary obstacles, such as ditches, low fences, etc., usually found in riding across country and to make a charge when the enemy is reached.

(*c*) Ability to maintain his strength and flesh under the vecissitudes of a campaign when rations are frequently short and irregular and when often grazing is the only means of obtaining food.

(*d*) An equable, unexcitable temperament.

(*e*) Sufficient speed and weight to meet and overcome hostile cavalry in the charge.

(*f*) Gaits such as will enable him to conform to those of the ordinary route march without urging or "jigging."

The thoroughbred of the Virginia hunter type is the only one within my knowledge which comes anywhere near meeting all these requirements and he fails in requirements (c), (d) and (f). Practically all thoroughbreds are slow walkers and their natural gallop is too fast. As the walk is used by marching cavalry than any other gait, no animal which cannot walk at least four miles per hour without urging should be allowed in a column if it can be avoided. This applies with especial force to officers' mounts.

During my service I have owned and ridden in field service, in addition to two or three animals that may be called just horses, the following animals:

(1) One Kentucky saddle horse, 16 hands, weight about 1,100 pounds.

(2) One half or three quarter bred Winnemuccer (Oregon), 15–2, weight 1,060 pounds.

(3) One three quarter bred Texas horse, from the Cabell farm, 15–2, weight about 1,050 pounds.

(4) Three three quarter standard breds. Two of these were a matched pair, 15–2 each, weight 1,030 and 1,050 pounds respectively. The third, a mare, was 15–3, and weighed about 1,080 pounds.

(5) One thoroughbred Virginia hunter, 15–3½, weight 1,080 pounds.

All of these were splendid animals of their type.

No. (1) had wonderful endurance but his high knee action and high strung temperament made him unfit for prolonged field service. He also lacked the power to stand being placed on short rations.

No. (5) would be in every respect a suitable service horse were it not that she requires to be well fed at all times. For riding at speed over rough ground with frequent obstacles I have never seen her superior.

The five horses included under (2), (3) and (4) were all excellent animals for any purpose. Of these the matched pair of standardbreds were the best. I have ridden them as high as 72 miles in 12 hours and have driven them to a buckboard as high as 180 miles in two days without injury. All five animals had excellent road gaits, were unexcitable, good foragers, and kept their flesh well.

It is a pleasure to ride a thoroughbred, whether it be a racer, a hunter or a gaited saddle horse, but I have yet to see a thoroughbred of any type, even that of the Virginia hunter (and a large number of each has come under my personal observation), which can be depended upon for such service as the cavalry on both sides had during the Civil War, our Indian campaigns or during the recent Punitive Expedition into Mexico.

Of the Arab I cannot speak from either experience or observation, but his very light weight, no matter how good his other qualities may be, puts him at a disadvantage when compared with equally good horses weighing from 200 to 300 pounds more than the Arab. In a charge, for example, he cannot compete with the heavier horse of say 15–2 in height any more than can the 14–2 polo pony compete with the polo horses in use today.

My opinion, based upon the above considerations, as to the best type of horse for the cavalry service may be restated as follows:

Type: Three quarter bred hunter or three quarter standard bred.

Height: 15–1 to 15–3, with occasional acceptance of especially good individuals not less than 15 hands in height.

Brigadier General J. G. Harbord, National Army:

As a general proposition I am in favor of a horse under 15–2, conformation proportioned to height. I believe there is more service as a weight carrier in such a horse; that he is more apt to be compactly built, will travel closer to the ground; and endure harder service.

I own the Arab stallion "Halim," now eleven years old, imported as a two year old by Colonel Spencer Borden, of Fall River, Massachusetts, this is one of the horses that figured in an endurance test near Fall River, ridden by Colonel Byram, several years ago, an account of which was written for the CAVALRY JOURNAL at the time. My impressions of the Arab are entirely favorable.

If the choice lies between cold-blooded, part thoroughbred, or the thoroughbred for cavalry service, I should say a half or three quarter bred animal would be the best for cavalry service. The thoroughbred strain would give spirit and heart, perhaps speed, while the common blood would make him less sensitive and nervous, more easily kept, a better "feeder," perhaps better adapted to weight carrying under service conditions. But if unlimited in choice a half or three quarter bred Arab would in my judgment be better than either of the foregoing.

I rode a thoroughbred in the Philippines, but not under conditions that could be called arduous. That particular animal was satisfactory.

In general I agree with Major Tompkins in his views as quoted in the *New York Hearld.* I do not see, however, that the Arab blood means a "non-galloping" horse. The blood that flows in the veins of all the gallopers is Arab originally. The particular one that I own gallops easily, most easily, for himself and rider, appears to enjoy it, and does it apparently in preference to a trot. He does trot well, however, and can walk five miles an hour. He is untiring, and the best dispositioned stallion I have ever seen.

Brigadier General Malvern Hill Barnum, National Army:

I think that the horses in cavalry service should range between 15–1 and 15–3 inches. I believe that the 15 hand horse is too small and that 16 hand horse is too large.

I have had no experience with the Arab type of horse, either as an owner or as an observer. I have seen some of them, but only so casually that my observations would be of little value.

I favor a horse for cavalry service which has some thoroughbred strain in him. It could not be less than one quarter and be given recognition, nor do I think that it should be more than one half. I believe that the cold blooded horse lacks the spirit and nerve which is desirable, and I also believe too much of a thoroughbred strain gives a horse that is too high strung and too delicate to stand the rough usage of the cavalry service, especially when in active service on the field.

I have never ridden a thoroughbred horse under arduous field conditions. The thoroughbred horse being short haired and thin skinned is more liable to minor accidents; I believe that he will be out of condition and on sick report a great many more days in a year than will be the one quarter or one half breed. I consider the cavalry horse as not only the means of locomotion for the cavalry man, but as a part of the striking force in the cavalry. I believe that cavalry charging against an enemy will occur only very infrequently, therefore the cavalry horse should be considered about as follows:

Nine tenths for purpose of transporting cavalrymen.

One tenth of use in case of a charge.

Colonel Francis Le J. Parker, National Army:

I incline to a horse under rather than over 15–2 and as near as practicable to about 15–1 or 15–2.

I believe experience to have shown that horses of this size have sufficient bone and muscle for carrying a cavalryman and his necessary equipment, can handle themselves more easily

on varied terrain than the larger horse, are more easily kept in good condition, and have enough speed and mass to give a good, all round cavalryman's mount.

I believe it to be a fact that at present, and for generations to come at least, 15–1 is more nearly the normal height of the horse than is 16–3; and that a larger proportion of 15–1 horses are well proportioned and of approximately uniform strength in their more vital organs.

As to the Arab horse it is only to a slight extent as an observer of four or five animals, which were given a pretty thorough test, extending over two or three years by an experienced horseman. The results impressed me unfavorably, but I did not regard the test as at all conclusive except as to the particular animals in question.

In the rather hap-hazard way in which the average trooper is selected for cavalry service, and incomplete and an uniform methods of training that have been employed in the past, I believe no one type of horse will suit all riders and conditions of service. For certain special types of service (*e. g.*, in very mountainous country into the kinds of trails that usually exist there), I believe small horses of the locality will usually give better results than the larger horse that would be more useful for average service. Disregarding special cases of this kind, my preference for the average cavalry horse would be, for troopers half bred, for officers three quarter bred. I believe the proportion of pure blood indicated in sufficient to give the average of courage, speed, etc., that will meet our needs, while breeding with other well selected types will tend to the protection of a hardier and less excitable animal. I have, however, had no experience whatever in breeding of horses, and the above impressions are the result simply of observation of the horses that have come under my notice.

Under conditions involving long continued service with long marches, scant forage, etc. No. In severe winter weather (N. W., U. S.) involving exposure for about seven to ten days, yes; also, under long continued ordinary conditions in camps, etc. Of two thoroughbreds so used during a period covering about three years, one (a gelding aged eight at end of period, height a little over 15–2, weight, (when in condition) about 1,040

pounds) appeared to have all the qualities of an excellent officer's charger, the other (a mare, about same age, height a little over 15–3, weight ordinarily about 1,025 pounds) was an excellent animal for ordinary steady use under conditions not involving hardship, but of uncertain temper, except when very regularly exercised. The gelding was exceptionally close-coupled for a thoroughbred, and of perfect disposition for work out of ranks, apt to become excited when in a group of horses to which he was not accustomed. Neither of these animals appeared unusually prone to disease or injury. The gelding was easily kept fat, the mare lost flesh considerably under any hard work. I believe the thoroughbred, while exceedingly intelligent and susceptible of high training when he can be advanced quietly, is much more easily ruined by poor handling and is unsuited for use by unskilled troopers or for training under conditions that demand haste in the course.

Colonel E. L. Phillips, National Army:

I prefer a horse under 15–2 rather than over; for the reason that I believe a horse of this size to be ample for the purpose, and at the same time more durable, easier to maintain under campaign conditions, more hardy and less expensive to procure, than horses of a larger type.

I have had no experience with Arab horses.

I am not committed to any particular breeding. For the practical use of our cavalry I believe the horse as he stands is the only essential question. If he is approximately right as to size, conformation, color and age, he is pretty apt to be a horse we are looking for, very anxious to get, and will make most excellent use of, whatever his history or breeding.

I favor the medium sized horse, from 15 hands to 15 hands 2 inches, short coupled, strong in bone and muscle, of large lung capacity, adapted to carrying heavy weight at moderate speed over long distances, and capable of enduring hard work on short rations, and of living partially at least on the country. Of course certain breeds, or certain mixtures of blood, might

produce horses of this type with greater certainty, but I am not well enough posted on breeds and breeding to state just what these should be.

I believe that we should frankly and freely proclaim the fire-arm to be the weapon of our cavalry—offensive and defensive; that our aim should be to multiply the terrible efficiency of the modern fire-arm by applying to it the greatly increased endurance and mobility which the horse in skilled hands can contribute to our action. We must attain the highest skill in horsemanship with our troopers—not with a view to the use "cold steel" nor the "horse as a weapon," but because the maximum of mobility under the difficult condition of campaign and the maximum of endurance on the part of both horse and trooper, can be realized only through the highest skill in horsemanship. I believe these should be the controlling ideas, when we come to selecting a type of horse for our cavalry.

I have never ridden a thoroughbred horse in the field.

Major Ben Lear, Jr., General Staff:

A horse 15 hands in height is preferred. Horses of that height are generally better made than taller ones; they are usually active, and good keepers. Enlisted men of the cavalry are usually of medium height. A small man should not be assigned a large horse. In the last troop I commanded only one horse was less than 15 hands, all others exceeded that height, the average being at least 15½ hands.

The type of horse I have in mind is one called a "cow horse" —not a "cow pony." This type of horse is occasionally found in New Mexico and Arizona, though most of the cattlemen's mounts are "cow ponies." When one finds a "cow horse" it's readily seen that it is a fine animal of about 14–3 to 15–1 hands in height, full barrelled, closely coupled and weighing 1,000 to 1,075 pounds. He costs the "cow men" from $150.00 to $250.00. Rather a high price, but they pay it for the right animal.

We do not want the 14–2 to 15–1 hands "cow pony." They remind me of the weedy thoroughbred.

Have had occasion to observe but one Arab horse. It was an officer's mount; and of the high strung, nervous type. Never admired it and always thought it unsuitable for a trooper's horse. This on account of it's nervous condition.

We want conformation and soundness first, and then *good breeding.*

Have never ridden a thoroughbred under arduous field conditions. Have seen two thoroughbreds that did stand hard field work, Captain I. S. Martin's "Christopher," and Major George W. Moses' "Prince." The former is the better horse. You are doubtless familiar with "Christopher's" conformation. While a trifle low at the withers, he has plenty of barrel, bone, muscle, and a good temperament.

Lieutenant Colonel Edgar A. Sirmyer, Cavalry:

I believe first in the horse of between 15 hands and 15–2. My experience under service conditions including seven years in the Philippines, and nearly four years on border patrol duty, only goes to confirm me in an early belief that the short legged, short coupled horse is the ideal horse for the cavalry. He grazes easier, he is fast enough for our work, and above all he is easier to handle than the tall horse and makes quick mounting and dismounting a pleasure at all times, and sometimes, a life saver.

Am sorry to say that my knowledge of the Arab is only obtained through consistent reading of the accomplishments of that animal here and abroad. He should be an ideal type.

I prefer first the three quarter bred and second the half bred.

The pure thoroughbred has no place in hard field service, and I have never seen one that the owner did not have to baby. He has the heart but not the constitution for hard work on little or non customary food. The cold blooded horse is so worthless that he requires no discussion. They are always the

first to go down in flesh under continuous hard work and irregular food. The three quarter bred has the heart of a thoroughbred, plenty of his speed and pride of condition but not his great sensitiviness, fastidiousness and inbred weakness. To my mind he is the ideal cavalry mount. I had several in my last troop from Virginia and no matter how hot and dusty the day or how hard or long the road, it was a pleasure to see him come in with his head up and his ears forward looking for more worlds to conquer. He is a good jumper, intelligent, light in the hand and so much cleaner looking in every way that his rider is always proud of him and therefore gives him the best of care.

Lieutenant Colonel George Williams, National Army:

I favor a horse over 15-2, but not over 16, for cavalry service. My reasons for that are, I believe that a horse with the proper conformation ranging between 15-2 and 16 hands, is a much stronger horse as a weight carrier, a better galloper, and better qualified to make marches at the rate of five or six miles per hour, than the smaller horse.

I had very little experience with Arabs, in fact the only one I ever saw was the one owned by Major Frank Tompkins, cavalry. I observed him for awhile in Mexico. While he undoubtedly stood the trip well, he had the advantage of being ridden during the hardest part of the campaign (that Major Tompkins refers to in his letter) at the head of the column, and in addition he had the advantage of extra care that officers horses always receive. I saw other horses in the same command that were over 15-2 in height, had been ridden in ranks, carrying the additional weight that men have to carry, that were in as good, if not better condition, than Major Tompkins' Arab. This is not trying to run down Major Tompkins' Arab, as I am an admirer of both horse and man.

I favor, first the thoroughbred, second the three quarter bred, third the half bred, fourth the one quarter bred, and if possible I do not want to have anything to do with cold blooded

horses. This does not mean that I believe all thoroughbreds, because they are thoroughbreds, are good horses, but do believe that take the same number of cold blooded horses, and the same number of thoroughbred horses, say three hundred of each, you will find that there are by far more good cavalry horses in the thoroughbred type, than in the cold blooded type.

I have never ridden a thoroughbred horse under hard field conditions for the simple reason I have never had money enough to buy a thoroughbred that I consider the proper type, though I have seen many. I have ridden a seven-eighths bred horse for a good many years, and am now riding and did ride in Mexico a three quarter bred horse.

Neither of these horses were unduly sensitive, prone to disease or injury or otherwise unsatisfactory as an officers charger. The seven eights bred horse is still living and now at the Mounted Service School. He is twenty-eight years old. I rode him continuously from 1898 until 1905, then he was turned out to pasture for two years while I was in the Philippines. I again rode him continuously on all duties, and in jumping, from 1907 until 1911. During this period he was on sick report twice, once with pneumonia when I came back from Cuba, and once he ran a nail in his foot. I understand he is still being used for light work at the Mounted Service School. Captain Richmond tells me as far as he knows he has never been on sich report since I gave him to the School in 1911. Name, "Chief."

The three quarter bred horse I rode in Mexico was sick when we started and lost weight rapidily the first three weeks we were in, however, I rode him almost continuously, and when we came out of Mexico in February of this year, he was in excellent shape, and is now. He has been on sick report since we came out due to a kick in the hock. He was an excellent forager in Mexico, eating everytime he had a chance and anything he could get hold of. Both of these horses stood 16 hands.

Colonel Henry T. Allen of the Thirteenth Cavalry took three thoroughbreds into Mexico with him; one was ridden continuously by his orderly carrying the usual weight an enlisted man has to carry. She was never sick but once and that did not "lay her up" for marching. She had the same sickness

that Major Tompkins' horse had, namely one case of colic. She stood slightly over 15–2. One of the other horses of Colonel Allen's was on the whole trip, but was lame for a short time on account of bruising his sole on the rocks, however, did not last long and he was again ridden. Was in most excellent shape when we came out of Mexico and still is. The third horse when not ridden by Colonel Allen carried his bedding roll.

Captain Clarence Lininger, Cavalry D. O. L. (then First Lieutenant, Troop "M" Thirteenth Cavalry) who was with Major Tompkins on his march to Parral, Mexico, made measurements of the horses that stood the campaign the best. He found in his trip that the horses 15–2 were the ones that stood the trip the best. For further information, both as to Colonel Allen's thoroughbreds, and Captain Lininger's measurements and experience, I would refer you to these two officers.

If officers ride small horses their gaits are not suited to the gaits of their command and therefore make it very hard on the troop animals. It is not believed that enough small animals of suitable conformation could be purchased to mount the cavalry. Of course it would be impossible to mount them on Arabs.

Colonel Samuel B. Arnold, National Army:

A horse between fifteen hands and fifteen hands two inches is preferred, but there are many good cavalry horses over 15–2, and under 15 hands that should not be turned down on account of their height.

The whole matter of height, within reasonable limits, should depend on the horse in question and his conformation.

I have had no experience with the Arab horse.

The cold blooded or quarter bred horse, provided, of course, that the horse has proper conformation, and is not like many of the clumsy mounts that are unfortunately found in the cavalry service.

Have never ridden a thoroughbred horse in the field.

Colonel George C. Barnhardt, National Army:

I favor a service horse not over 15 hands 2 inches in height with proportionate conformation.

My experience teaches that horses under 15½ hands stand hardship better than taller horses. They are handier and more comfortable than the leggy ones.

I have had no practical experience with the Arab horse.

I do not favor the cold blooded horse for cavalry service. I favor a strain of thoroughbred from one half to full.

The cold blooded horse, as a rule, lacks the vitality and staying qualities possessed by the stocky well boned near thoroughbred. Most of the thoroughbreds now in the service are not the type I favor, for they are generally animals purchased from the race track or that have been trained for racing when very young. They are consequently nervous and excitable and wear themselves out on the road. I must confess that the type of thoroughbred or part thoroughbred that I favor is not usually seen, the usual type being the weedy, small boned race horse.

I have ridden thoroughbreds on marches extending from four to seven days. One had been a race horse that I had worked with for two years trying to convert into an officer's mount and never succeeded in getting him broken of his nervous fidgety habit. The other was a three quarter thoroughbred, 15¼ hands, well boned and muscled, and never had been on the tracks. I rode him 200 miles with a squadron of cavalry, making the trip in six days. This horse showed less fatigue than any other horse in the squadron, and was most comfortable to ride.

Colonel George W. Moses, National Army:

In general, I wish to state that I believe Major Tompkin's horse is a model for mounted infantry. So far as the model type for cavalry is concerned, I don't believe that such type has yet been developed in our service.

But eliminating the tendency of our present thoroughbred type to bolt whenever the horses pass beyond the slower gaits, I believe the thoroughbred, large enough boned and so stockly built as to make them easy keepers is certainly the type we should try to develop.

I believe up to the present time the Morgan horse comes the nearest to fulfilling these conditions of any class of horse with which I have been personally acquainted.

The cavalry horse should certainly be of fifteen hands two inches in height in order to give sufficient weight and efficiency in the charge.

I have not had any experience with the Arab type either as owner or observer.

I have ridden a thoroughbred under arduous field conditions, but have not found him unduly sensitive, prone to disease, or injury, or otherwise unsatisfactory as an officer's charger, except in so far as results from his tendency to out-run all other horses in the cavalry charge.

Major George P. Tyner, General Staff:

I favor a service horse of from 15–1 to 16 hands, both inclusive. The small horse is worthless in mounted combat as it cannot throw enough weight in the charge.

The Arab horse is unsuitable for the reason given that he has not enough weight and cannot be obtained in sufficient numbers in this country to make it a factor in the stud. I have only seen the Arab for a short period of time as an observer. Have had no practical experience.

I favor thoroughbred sire and standard bred dam to get the best mount for the trooper. Any clean, strong, square gaited grade mare should be acceptable. For the officer I favor the pure thoroughbred, 15–3 to 16 hands, weighing 1,075 pounds or over. The officer's mount should have the appearance of standing about 15–2 but when measured the stick should show more than an inch higher.

I am today using a pure thoroughbred (by Imp. St. Dory, dam Egotism) that I purchased as a three year old nine years ago this month. He will do anything that comes up in a troop without any effort or excitement and do it every day although he raced as a two year old and as a three year old. Except for three years while I was in the Philippine Islands this horse has been one of my regular mounts. While on foreign service I had the horse on a farm near Junction City. My other mount is "Miss McClure" (by Ort Welles dam Sweet Billie) foaled April, 1910, and purchased from your School by Lieutenant Doak. Both of these animals have just finished a winter without blankets and neither had a sick day. Properly handled, the pure thoroughbred is the ideal officer's mount.

Colonel Samuel McP. Rutherford, National Army:

Am in favor of horses not over 15 hands 2 inches in height. Exceptions to be made of especially good horses over that height.

My experience, both before going into Mexico in 1916, and during my ten months' stay there, is that the smaller horses stood the work better, lost less flesh, and as a consequence, were less trouble with sore backs.

I have had no experience with the Arab horse, except what I saw of Major Tompkins' Arab stallion in Mexico. From my observation, I am of the opinion that this horse received more attention than practically any other horse in Mexico. Had he received the same treatment as to forage, etc., as some of the other horses, there might have been a different tale to tell.

It has been proven without a doubt that the cold blooded horse can take better care of himself than the thoroughbred, and the more thoroughbred blood in him the less able he is to take care of himself when forage is shy.

Another matter to be considered in connection with the

thoroughbred, is the care required, and the constant anxiety of the owner in this respect.

I have not ridden the thoroughbred horse.

I have been with a number of officers who were riding them, however, and from observation I am of the opinion that most of them were unduly sensitive and prone to disease.

A number of officers who took thoroughbreds into Mexico had to leave them at some camp and ride a troop horse.

THE LABORER WORTHY OF HIS HIRE.

TO urge upon Congress the importance of a good corps of officers with pay corresponding to their merit and sacrifices, George Washington, in the first year of the Republic, writing from Harlem Heights, on the 24th day of February, wrote the following truths which are as forcibly applicable to the situation of today:

"A soldier reasoned with upon the goodness of the cause he is engaged in and the inestimable rights he is contending for, hears you with patience and acknowledges the truth of your observations, but adds that it is of no more importance to him than to others. The officer makes you the same reply, with the further remark, that his pay will not support him, and he cannot ruin himself and family to serve his country, where every member of the community is equally interested and benefitted by his labors. The few, therefore, who act upon principles of disinterestedness, comparatively speaking, are no more than a drop in the ocean.

"It becomes evident to me then, that, as this contest is not likely to be the work of a day, as the war must be carried on systematically, and to do it you must have good officers, there are no other possible means to obtain them but by establishing your army upon a permanent footing and giving your officers good pay."

The above basic truths written at the birth of the Republic might have been enunciated one hundred and forty-one years later, at the beginning of the greatest war of its national life. Officers and non-commissioned officers have various degrees of additional responsibilities and special work according to their degree and rank. These special duties call for special education involving long years of preparation and much additional labor and responsibility. In every war, the percentage of casualties among officers and non-commissioned officers is markedly higher than among privates. In time of training, the percentage of illness from breakdowns and overwork also shows to a striking degree the effect of the extra work and responsibilities upon these selected men.

After much careful expert consideration, a scale of pay commensurate with the additional duties and responsibilities of the non-commissioned officers was fixed by Congress in 1908. The effect of this wise scale was shown in the resulting marked incentive to strive for promotion and the high class of men who reached and held the higher non-commissioned rank. The first army legislation for the great war was an increase in pay of all enlisted ranks, but so unequally distributed as to reduce by more than one-half the financial reward for the performance of the duties of non-commissioned officers.

The following table gives the new and old actual pay, and the percentage of additional pay over the base pay of a private, for the principal non-commissioned officers:

Rank.	Old Pay	New Pay 1917	Old Additional Percentage over Private	New Additional Per centage over Private
Private	$ 15.00	$ 30.00	....	....
Private 1 class	18.00	33.00	20%	10%
Corproal	21.00	36.00	40%	20%
Sergeant	30.00	38.00	100%	26%
1st Sergeant	45.00	51.00	200%	70%
Sgt.-Major	45.00	51.00	200%	70%

The vicious effects on discipline of this change of rate of pay have been apparent to every officer in direct contact with troops during the last three months. It is the inbred American habit of thought to measure the importance of a position by the salary attached. It is not only the money but the prestige and importance that attaches to a well paid position that counts. The one-hundred thousand dollars a year executive is held up to the American school boy as a model of power and the height of success. The boast of a fifty per cent. raise is the proudest proof of commercial efficiency.

Formerly a corporal promoted to the grade of sergeant measured his increaed importance in his own estimation and in the eyes of his fellows by the change from 40 per cent. raise to a 100 per cent. raise over his privates pay, and was duly inpressed and proud of it. Today this promotion means a raise of $2.00 or 6 per cent., which is less than the raise from a private to private, first class, and totally fails to compensate for the vastly greater training and responsibility required by the promotion. The situation is even worse with those over-worked non-com-

missioned officers, the company First Sergeant and Regimental Sergeant Major. These men have duties so exacting and of such wide responsibilities as to demand the highest character, strictest sense of duty, and closest application to routine and detail. In a military way they are both chief clerks and foremen. Their duties call for practically the character and force of an officer without the higher educational requirements. A 200 per cent. raise over privates pay was a fair recognition of their services. At the outbreak of the war, the First Sergeants, and Regimental Sergeant Majors were as fine a body of men as could be assembled for their positions. The proof of the efficiency of this 200 per cent. raise system in attracting desirable men is that 95 per cent. of them now hold National Army commissions of the grade of Captain or First Lieutenant.

It is very difficult to obtain men of the same character to train for these positions in order to replace the men who have received commissions. The small additional pay does not compensate for the longer hours, closer confinement, and greater worry and responsibility of a First Sergeant. It is easier to serve as a sergeant. The same is true of promotion to all non-commissioned grades. It is a reversion to the conditions preceding the passage of the 1908 pay bill. First Sergeants request to be relieved from their positions and made duty sergeants and other non-commissioned officers deliberately commit offenses in order to secure their own reduction or are slack and indifferent from lack of interest or a preference for the relatively well paid and easy position of private first class. Many cases of resignations or deliberate misconduct due to this cause have come to the writer's notice. The actualities of the war are too remote to form an incentive to ambition in service in this country, and patriotism is interpreted rather as a willingness to charge a machine gun gloriously, than as an obligation to do a bit of drudgery, day in and day out, because he is the better man for the job can can handle the responsibility. The causes given for the increase of the base pay of privates from \$15.00 to \$30.00 were the great increase in wages in civil life and the high cost of living. Undoubtedly another factor was a lingering hope that this high wage would stimulate recruiting and perhaps render the draft bugaboo a dead letter or

at least, postpone its application. Whatever conditions made a 100 per cent. increase in pay necessary as an inducement for the enlistment of a private, apply with equal force to the enlistment and maintaining of a man with the high qualifications suitable for a Sergeant or Sergeant Major, and he will not enlist or, if drafted, will not do the work unless he gets the pay. It is pennywise and pound foolish to close the legislative eye to that elementary fact.

The case of the commissioned personnel is even worse than that of the non-commissioned officers. Commissioned officers receive part of their salary in cash and part as an allowance of the use of a house and the actual fuel and light for it according to law. (34 U. S. Statute 1168). They do not receive clothing or rations as do enlisted men. The law provides that when no houses are furnished, that a money allowance be paid so that officers can rent and heat houses. (34th U. S. Statute 1169). The law even goes further and says that, if the officer is temporarily in the field as in Indian Campaigns, he shall not lose the right to house, heat and light for his family. (27th U. S. Statute 480). This allowance is a part of the legal pay and income taxes are assessed thereon at a valuation of $550.00 per year for a captain, and $760.00 per year for a Major.

Without any change in the law by Congress, the commissioned officers have suffered an actual reduction in income amounting to 25 per cent. through the decision of the War Department, abrogating the above right to house, fuel, and light, as follows:

> "Duty with troops in the field during present war is not temporary duty. All duty with troops of any kind in the field, at home or abroad during the present war, will be considered as not temporary duty in the field in contemplation of the Act of Congress, approved February 27, 1893, which provides that officers temporarily absent on duty in the field shall not lose their right to quarters or commutation thereof at their permanent stations while so temporarily absent. Under this decision no officer or enlisted man on duty in the field can have any official station elsewhere, within the meaning and contemplation of the laws and the regulations relating to the allowance of quarters or commutation thereof, but while on such duty his rights as to quarters will be as prescribed for field service."

The striking injustice of this decision is that officers who are fighting in France for their country, and even officers in

camp, training troops to fight, are at once furnished by a reduction of 25 per cent. of their pay, but officers on staff duty at Washington or on quartermaster duty, etc., get their old peace pay.

No pacifist could imagine a more discouraging handicap for officers than to punish them by a 25 per cent. cut in their pay as soon as they start to fight or to teach troops how to fight, while they have at the same time to meet an average increase in cost of food, clothing and necessities of over 50 per cent. The effect of this decision goes further and abrogates officers' peace time allowance for shipping their property, furniture, etc., at government expense or of storing it in government buildings during the war. This will cost the average officer $150.00 to $200.00 per year.

It is a fair estimate to say that the actual 1917 income of a commissioned officer is only 50 per cent. of what it was at the outbreak of the war in 1914.

The commissioned officer has to buy his own rations and clothing from his pay, while these are supplied the non-commissioned officer in certain fixed quantities without regard to the increased cost. The enlisted man therefore gets an automatic increase in pay with the rise in cost of commodities, while the officer has to meet the increase from his limited pay. The September report of the Bureau of Labor Statistics show that in three years flour has advanced 125 per cent.; corn meal, 89 per cent.; lard 78 percent.; and the average cost of all food purchased by the officer has increased 42 per cent. Leather shoes have advanced from $3.50 to $7.50, officers boots have advanced from $18.00 to $30.00 per pair, and leather leggins have tripled in price in three years while overcoats have gone from $55.00 to $80.00 in the last six months. All of these articles must be bought by the officer, but the corresponding article is supplied to the enlisted man without regard to increased cost of production. The severest blow though, to the officer, has been the War Department decision depriving the officers of house, fuel and light. In some cases, officers with their families left in government houses in the United States while they themselves were serving in France, and straining their financial resources to the breaking point to meet the situation,

have had their helpless and weeping families forced to vacate their houses and seek such shelter as they could. Others have had to store furniture and household effects at from $12.00 to $20.00 per month and send the family to live with relatives. No officer can give his whole time and thought to his duty for sixteen waking hours a day if he has the care and safety of his family and property constantly in jeopardy. It is his patriotic duty to sacrifice both himself and his family for his country, but so is it the duty of every citizen. How this duty is regarded is shown by the recent strike of 35,000 shipwrights and iron workers at San Francisco and Seattle. This strike tied up the construction of $150,000,000 work of government shipping and aeroplane construction. The results of this delay may yet cost thousands of lives of American soldiers. The reason given for the strike was the high cost of necessities. The wage scale demanded by these laborers for an eight hour day work were as follows, and increase of between 25 per cent. an 50 per cent.:

Boilermakers	$6.00
Machine hands	4.50
Riveters	6.00
Moulders	6.50
Pattern makers	7.00
Steam fitters	6.00
Laborers	3.50

The daily pay of officers is as follows for the first five years of service:

Second Lieutenants	$4.72
First Lieutenant	5.56
Captain	6.67

Further the officer has to buy coal, light, food, meat, bread, shoes, and pay house rent at exactly the same rate as these strikers. The strikers are reported to have practically won the scale of wages they demand, getting in addition double pay for overtime night work. The officer does night work regularly at least once a week in guard duty for twenty-four hours at a time and few officers have not had clerical duties in the last month requiring long hours at night. It is not necessary to mention the relative risk the officer takes of being crippled or

killed by the Huns or submarines as compared with the risk from street car and sewer accidents of the striking laborers.

Yet the mere thought of a strike or even a concerted protest by the disciplined army officers is unthinkable. They must depend on the aroused sense of justice of the country to correct their conditions.

The simple remedy is as follows:

(1) Give non-commissioned officers the percentage of increased pay over the base pay of privates as fixed by the Act of Congress of May 8, 1908.

(2) Restore to commissioned officers the right to house, fuel and light or a money allowance for same when these are not available. Make this allowance apply in time of peace or time of war, and equally in camp, post, or border duty.

(3) Give officers an allowance of one ration for each person actually dependent on them for support, not to exceed the number of rooms for quarters authorized by present laws for their respective grade.

(4) Supply each officer with an allowance of uniforms each year, gratis, as is done for enlisted men.

(5) Supply storage for officers' baggage and furniture until the close of the war, or else ship same at government expense to a place of private storage selected by the officer.

BOLO.

THE ARMY VETERINARY SERVICE.

By Major J. W. Rainey, R. of Q. A. V. C. British Army.

THE present work and organization of the Army Veterinary service afford a striking instance of what can be achieved in a short while when science is adequately assisted by finance and in other ways given facilities fairly completely to develop its latent possibilities. The existing war is the first recorded in military history in which the Veterinary Service of the Amy has been permitted and assisted to carry out a definite scheme of its own generation, and it is this fact which gives most interest to a critical examination of results as they stand today.

The British Nation has been blamed by other nations and by its own citizens for its disregard, in the past, of science, but the Royal Army Medical Corps and the Army Veterinary Corps of the present constitute a powerful argument for those defenders of British Sanity who maintain its capacity to adapt to practical needs ideas which other, possibly more imaginative nations have visualized more fully, but have not always in the last resort so completely developed. The old English proverb "Sharp's a good dog but Holdfast's a better" may perhaps be taken to express this national characteristic.

Primarily an Army Veterinary Corps must justify its cost on economic grounds. The humanitarian factor, although it plays an important part in the practical work of the Corps, cannot for purposes of war on a modern scale be held alone to justify the cost of so extensive an undertaking as the Army Veterinary Corps of the British Army of today.

It is not possible at this stage to draw up a balance sheet that would accurately or even approximately show what dividend the Nation derives from its capital outlay in this respect, but the following figures present, it is thought, a fair

prima facie case in favor of an Army Veterinary Service as an economic factor in war:

(*a*) The total wastage* among horses and mules of the British Forces at Home and Expeditionary Forces abroad, including losses from enemy gunfire and all other causes whatsoever, during the year ending December 31, 1916, amounted to thirteen per cent. of the total animal strength.

(*b*) The total wastage among horses and mules of the British Forces during the year 1912 (*i. e.*, during peace), amounted approximately to 14.80 per cent. of the total animal strength.

These figures mean that in spite of continuous losses from enemy gunfire, and from the inevitable chances and vicissitudes of war, the annual wastage among probably the largest number of horses and mules ever collected together has, during the last complete year of war, actually been less than the rate of wastage in time of peace. This notwithstanding the fact, bemoaned by humanitarians, that the bulk of the animals have been standing night and day in the open exposed to all weathers, whereas in time of peace all army animals are stabled under the best hygienic conditions.

The average annual mortality among army animals participating in the South African War, 1899 and 1902, exceeded 55 per cent. per annum for the whole war.

There was no Army Veterinary Corps in those days. The Army Veterinary Department as it was then, consisted of only a few officers and Auxiliary Civil Veterinary Surgeons whose duties for all practical purposes were limited to professional attendance upon such sick and wounded animals as chanced to come within their narrow official scope.

Proposals for a better organization, indeed for any adequate organization, were coldly received. The Military Chiefs of those days in common more or less with the rest of the community had little confidence in their veterinary advisers and relied largely upon the time honored fallacy that all such subsidary technical matters were of slight, if any, military importance.

***The expression "wastage" includes deaths, destructions, missing and castings for destruction or sale. The mortality alone in 1916 was 9.47%.**

Consideration of more legitimate military importance may have led in 1899—1900 to a cavalry campaign for which no hay was thought necessary, resulting for example in that memorable occasion on which a brigade of cavalry marched out from Bloemfontein under 100 strong, the remainder *hors de combat* for the most part from bulk starvation and consequent debility of their horses.

Major W. E. Watson, D. S. O., Sixth Dragoon Guards, who marched out with the "Brigade" on that occasion places the strength of effective mounted men as low as fifty.

It is not, however, claimed that the South African War of 1899—1902 and the present European War are exactly parallel cases in a veterinary point of view. It is not necessary to make such a claim since there is a wide enough margin between an annual equine mortality of nine and forty-seven hundreds per cent. and fifty-five per cent. to permit of considerable departure from the parallel, without affecting the validity of a statement that on the whole the better results of the present war in equine matters are chiefly attributable to the work of the Army Veterinary Service.

If the South African War was one of marching and counter marching, then this war has been one of hauling and straining to drag vehicles and guns of all descriptions through tenacious mud, under conditions of the greatest hardship and discomfort. Moreover, although there has been little of cavalry work in France, Egypt has afforded opportunity for some extensive operations in this respect, and, in the fighting against Bulgaria during 1916 very heavy work was required of the pack-transport animals. Statistical returns for the German South-west African Campaign and Rebellion, August, 1914, to July, 1915, and for the subsequent period July, 1915, to March 1, 1916, show an annual mortality at the rate of 9.09% among animals (horses and mules) of the Union Forces.

The conditions of this campaign were similar in most respects to those of the South African War, 1899—1902, with this considerable difference that the Union Government were careful to include in their forces an Army Veterinary Corps, identical as far as possible in its organization and proportionate

strength with the Army Veterinary Corps of the Imperial Army.

* * * * * *

The officers of the Army Veterinary Corps and graduates of British and Colonial Veterinary Colleges, with the exception of Quartermasters appointed for duty as such to Veterinary Hospitals, Horse Convalescent Depots, Base Depots of Veterinary Stores and Schools of Farriery.

* * * * * *

The present personnel as a whole is keen, enthusiastic, and imbued with those ideas of humanitarianism and helpfulness which are essential to useful work among dumb and comparatively stupid animals.

The work of the Army Veterinary Service comprises:

1. The examination for soundness of all animals prior to their purchase for the army.

2. Care of remounts on board ships.

3. Prevention and control of contagious and other disease among all army animals.

4. Treatment of minor cases of sickness and injury under regimental arrangement with the unit to which the animals belong.

5. Evacuation to veterinary hospitals of all cases of sickness or injury that cannot be treated properly with the unit, or that, for military reasons, it is not desirable to retain with the unit.

6. Maintenance of an efficient standard of horse-shoeing throughout the army.

7. Supply of veterinary medicines and equipment.

8. The training in Schools of Farriery of shoeing-smiths and cold-shoers required for the army.

9. Careful observance of and advice upon all matters directly or indirectly affecting the welfare of the army horse, *e. g.*, stable management, forage and feeding, watering, etc.

The policy of the Army Veterinary Service is well expressed in the adage "prevention is better than cure." The import-

ance of prevention in military matters is paramount, and herein veterinary medicine diverges widely from human medical practice. This becomes apparent when one remembers that the horse cannot help himself but is entirely dependent upon the observation and foresight of those whose work it is to fend for him.

Veterinary and medical practice run side by side so far as hygiene sanitation and anti-sepsis are concerned, but the point of divergence is where the man can report himself "sick," and the horse cannot. This means that if the horse is to be adequately protected he must be inspected at least once daily by someone who is competent to detect incipient symptoms of disease.

It does not require much imagination to realize the enormous amount of work and organization involved in arranging for this service alone in connection with a military horse strength of many hundreds of thousands

The difficulty in detecting the first symptoms of disease in a horse is considerable and no small degree of experience is necessary before this difficulty can be overcome. This fact is particularly brought home to those concerned in dealing with outbreaks of equine influenza and pneumonia. In this class of disease, the greatest scourge of the equine race under conditions of domestication, frequently there is in the early stages little or no abnormal symptoms apparent to the unskilled observer. A horse to such may appear in good health although at the time a clinical thermometer will register a rise of five degrees F if the temperature of the animal be taken. It is hardly necessary to add that if taken out and worked in this condition, as only too often happens, the animals will subsequently either die or become so seriously ill as to necessitate several weeks of careful treatment.

Remounts, that is unseasoned horses, are peculiarly liable to this class of disease, so much so that practically every horse undergoes an attack subsequent to purchase and prior to commencing his military training. The Army Veterinary Service took early steps to combat this potential cause of wastage by enforcing the rule that in no case was any remount to be embarked on a ship or transferred from a Remount Depot unless

his temperature had been taken and found to be normal not later than the day immediately preceding his journey. This simple measure alone has probably saved the lives of thousands of horses. In addition to the above rule instructions are that when an outbreak of pneumonia or influenza occurs in any unit no horse of the unit is to be worked on any day during the existence of the outbreak unless his temperature has been taken and found normal.

HORSES ON BOARD SHIP.

There is no branch of administration in which the Army Veterinary Service has better justified its existence on economic grounds than in connection with the care of and arrangements for horses and mules on board ship.

At the outbreak of war it became evident that a large number of horses and mules would have to be purchased in other countries and brought to England by sea, and the Veterinary Directorate at the War Office undertook to provide Veterinary Surgeons to take charge of the animals during the voyage to this country. Veterinary Surgeons were also sent out with the Purchasing Commission to examine the animals before purchase and to make such arrangements subsequently as would ensure that only healthy animals were placed on board ship for conveyance to this country or elsewhere as might be required. One Veterinary Surgeon and a carefully selected lay assistants were allotted to each ship carrying horses or mules.

The appointment of an assistant, in addition to a Veterinary Surgeon, to each ship proved a fortunate arrangement as it was found possible after a years' experience to place many of the assistants in sole charge of the animals, and to withdraw a corresponding number of Veterinary Surgeons for duty with divisions of the new armies at a time when the problem of finding sufficient Veterinary officers for the latter was acute.

For purposes of convenience both Veterinary Surgeons and lay assistants when acting in sole charge of horses on board ship are described as "conducting officers." These conduting officers have done invaluable work. Many of them have been

continuously employed on horse-ships since October, 1914, and have become trained experts of the highest order.

During the first few months of the war the losses on board ship were somewhat heavy averaging about three per cent. for a short period. It is now rare to lose one per cent. Ship after ship arrives in port after the voyage across the Atlantic with at most one or two animals lost on the voyage and often none. Even on the long sea route from Canada to Mediterranean theaters of war the loss has seldom amounted to one per cent. Including the above mentioned heavy losses during the first few months of the war the total average loss on all horses and mules shipped from the beginning of operations to the present date barely exceeds one per cent. These excellent results are attributable in part to the pains taken to ensure the animals being in good health when shipped, in part to the expert care bestowed on the animals on board ship, and in part to the improvements on horse-ships that have been carried out during the war as the result of suggestions and recommendations received from conducting officers. A notable improvement in this connection has been the adoption of a system whereby animals are carried free in pens, each pen containing about five horses or mules. Formerly all army remounts were carried in narrow stalls, each animal having a stall to its self of a maxium width of two feet six inches.

The pen gives more freedom of movement, better facility for sanitation and ventilation, and even permits an animal, desiring to do so, to lie down for a while.

Incidentally an important economy has been effected in that far less timber is required for constructing pens than stalls.

The foregoing is only one instance of the many problems that have been tackled successfully as the outcome of keen and zealous observation and research on the part of conducting officers.

Conducting duty during this war has naturally not been devoid of stirring and perilous incident. In July, 1915, the S. S. *Anglo-Californian* carrying 925 horses from Canada to England was attacked off the coast of Ireland by a German submarine. After three hours shelling and the death of the captain

the ship put into Queenstown in a leaky and battered condition. Of the 925 horses on board 26 were killed by shell fire. The remaining 899 were ultimately landed at an English port in good condition owing to the gallant behaviour of the Civil Veterinary Surgeon Mr. F. Neal who, although he had every opportunity to leave in the ship's boats at the same time as the subordinate staff, remained at his post and tended the horses almost single-handed until the ship was conveyed into port. He also attended the wounded on board during the engagement. In recognition of these services brought to notice by the Admiralty, Mr. Neal was presented with the approval of the Treasury, with a gold watch suitable inscribed to commemorate the occasion.

The foregoing is but a single instance of numerous acts of heroism and devotion to duty on the part of conducting officers.

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WORK OF THE ARMY VETERINARY CORPS AT THE FRONT.

The work with divisions in the front line and field units and elsewhere is largely of a preventative and first-aid nature. In each division in addition to the Mobile Veterinary Section of which, later, there is a definite number of officers and non-commissioned officers, Army Veterinary Corps, distributed as evenly as possible throughout the fighting units, just as are Medical Officers and non-commissioned officers of the Royal Army Medical Corps. These veterinary officers and non-commissioned officers are responsible for carrying out simple first-aid treatment and for deciding what cases are slight enough for "duty and dressing," and what should be handed over to the Mobile Veterinary Section of the division for evacuation to Veterinary Hospitals on the lines of communication. They carry out the constant inspections of animals mentioned in the earlier portion of this artcile as being indispensable to prevention of diseases, both contagious and non-contagious among animals. Relatively the number of bullet and shell casualties among horses and mules is small as compared with similar

casualties among officers and men, because the animals are as far as possible kept behind the firing line.

In a big cavalry action naturally matters would be different but this form of warfare on a big scale still is awaited so far as the British forces in this war are concerned. Horses fare better than men in so far as their thicker skin and bulkier tissues offer greater resistance to projectiles and splinters, but worse than men in that economic considerations and mechanical difficulties often render it necessary to destroy horses for wound conditions which would at most maim a man. Open wound dressing is necessarily for the most part practiced in the field. Bandaging is only practicable to a relitavely small extent. Under the best conditions it has not on the whole been found a suitable form of dressing for the unclean type of wound met with on active service, and in the case of equines it is most difficult to apply a bandage to any situation other than the lower extremities of the limbs that will not speedily become displaced and thus a positive evil instead of a hypothetical good. Certainly bandaging appeals strongly to the popular imagination. There is an effective cleanly appearance about freshly bandaged wounds which catches the eye of the journalistic artist and, through his efforts, that of the general public.

In point of actual results, however, it has been found better to disregard superficial appearances and to enlist the bactericide aid of the oxygen of the atmosphere.

What is probably the best form of field dressing for horses discovered up to the present is as follows:

Foreign bodies are removed from the wound as far as possible without probing. Shreds of damaged tissues certain to die and decay if left inside are similarly removed with the dressing scissors. The wound is then gently cleansed with antiseptic wool, facilities for downward drainage of discharge are established and the dressing is completed by painting all exposed tissues with tincture of iodine.

It would not be permitted in an article of this kind to state fully how the personnel of the Army Veterinary Corps is disposed throughout a division; suffice it to say that every animal is able to receive at all times the expert attention of this personnel. No horse is permitted unnecessarily to suffer. If it is

evident that he cannot be restored to usefulness within a reasonable period then he is painlessly destroyed on the spot. If his injury or disease is amenable to treatment he is evacuated without delay to a Base Hospital containing facilities for the most up-to-date and scientific methods of treatment.

The Mobile Veterinary Section is a complete Veterinary Unit, allotted to a division, corresponding in many ways with a Field Ambulance of the Royal Army Medical Corps. The duty of this unit is principally to collect from fighting formations in its divisional area all injured, sick and debilitated animals requiring to be sent back to the large Veterinary Hospitals on the lines of communication. It also acts as a dressing station and undertakes the collection from the base of veterinary medicines and equipment. These stores are then distributed by the Section as required to divisional combatant units, a system which has proved far more convenient and expeditious than that in vogue in the earlier stages of the war when each unit in the field received its supplies independently from base depots of veterinary stores. Approximately half of the personnel of the Mobile Veterinary Section is utilized in the duty of collection of sick and first-aid treatment, including injection when necessary of tetanus anti-toxin; the other half forms what is known as the Railway Conducting Party. This party is responsible for safe conveyance of the patients from the nearest available railhead to the Veterinary Hospital at the Base and first-aid attendance en route. On its return from the base the conducting party brings with it the medicines and equipment required for distribution to divisional units, as mentioned above. Not all the patients collected by the Mobile Veterinary Section are sent to the base; when the division is stationary, milder cases are retained and treated by the Section and ultimately returned cured to units.

VETERINARY HOSPITALS AND CONVALESCENT HORSE DEPOTS.

These are situated on the line of communication and at the various bases of the Expeditionary Forces, in addition to many established in home commands.

An oversea veterinary hospital is established to deal at one time with 1,250 cases or a greater number, its organization

being such as to permit of ready expansion. The personnel allowed for each hospital is sufficient but not extravagant, having in view the important principle that an administrative service should be an economic dividend—paying proposition.

It is interesting to reflect that on mobilization the then diminutive Army Veterinary Corps was sufficiently hard put to it to find skilled subordinate personnel for one Veterinary Hospital as at present constituted, whereas there are now about thirty such, apart from Camel Hospitals and Convalescent Horse Depots, all staffed with competent highly trained personnel.

Each hospital is subdivided into wards and each ward as far as possible is appropriated to the treatment of a separate class of injury or disease. To the most skilled surgeons is given the care of wound cases; officers who have specialized in miscroscopic work have charge of the cases of parasitic skin disease and microbic affections. Similarly each non-commissioned officer has definite duties allotted to him according to the capacity he displays for a certain kind of work.

The treatment of parasitic skin disease alone presents an enormous problem. From earliest history parasitic skin disease has ever been the distressing accompaniment of war. Horses, like men, suffer from the depredations of lice but a far worse scourge of the former is in the disease known as mange.

This disease, caused by a microscopical insect parasite which attacks skin and in once species burrows under the surface of the skin gives enormous trouble. The intense irritation that occurs causes the affected horse to lose flesh rapidly unless promptly and efficiently treated. One Veterinary Hospital with the British Expeditionary Force is practically confined to the treatment of this disease alone. In the earlier stages of the war each case had to be separately treated by hand, involving an enormous amount of labor, but now there are established in many veterinary hospitals specially constructed dipping baths capable of dealing rapidly and easily with any number of patients. The bath is a long trench-like affair, dug into the ground and lined with concreted material, impervious to water. The bath is filled up to a certain height with a solution or mixture of the medicaments found most efficacious in de-

struction of the mange parasite and kept by means of steam of precisely that temperature ascertained to be necessary for the best results in the treatment. Matters are so arranged that the horse on plunging into the bath is completely immersed in the solution whence he emerges, having traversed the length of the bath, by upward incline to the dripping pens.

The principal trouble in regard to mange is to find a solution or mixture of medicaments that will destroy the parasite and its eggs without injuring the skin of the patient. Unless care is taken to observe both these conditions injury to the skin to a serious extent may supervene, so that the remedy proves "worse than the disease."

To eradicate mange entirely from an army in the field has so far proved impossible, but in this war it is kept well under control and has never got the upper hand, as it did in the South African War, 1899—1902, when it caused heavy mortality and inefficiency.

The great progress in methods of treatment of mange made by the Army Veterinary Service in the present war is scientifically gratifying and economically important. It has in faet, as a disease, ceased to be a terror and now only remains a nuisance. In the British Expeditionary Force eighty per cent. of all cases of disease, including wounds, admitted to Veterinary Hospital are returned to duty in due course. Of the remaining twenty per cent. a considerable proportion are painlessly destroyed, and sold at a good price to the local inhabitants for human consumption. In this country the percentage returned to duty from Veterinary Hospitals is naturally higher in proportion as the conditions obtaining at home are more favorable than those nearer the firing line. The absolute wastage both overseas and at home is thus kept down to a low monetary figure.

Each Veterinary Hospital is an entirely self-contained unit responsible not only for the treatment of 1,250 horses and mules but for the discipline, training, payment and general welfare of over 400 non-commissioned officers and men. Apart from medical and surgical treatment the horse and mule patients have to be fed, watered, groomed, shod, exercised and generally cared for in such a way that they will be fit for duty at the front.

or elsewhere when discharged from Hospital. All animals thus discharged for duty are sent straight to Remount Depots where they are classified and posted again for service to various branches of the army as may be most suitable.

The selection of adequate sites for Veterniary Hospitals has been a difficult business. Apart from the large area required, questions of accessibility to railway stations, good water supply, facilities for disposal of manure and carcasses, called for serious consideration. A horse normally needs for drinking purposes alone about eight gallons of water a day in addition to the requirements for surgical and other purposes. In the opening months of the war the Veterinary Hospital was necessarily for the most part an open air institution. Not at once could there spring into existence the present admirably constructed stables, operating sheds, shoeing forges, exercising tracks, store houses and other carefully devised arrangements for the convenience and comfort of animals and men.

Although it is true that horses tied up in the open will, if well fed and rugged, and provided with moderately mud-free standing, keep in good health and flesh, it is nevertheless impossible in the climatic conditions of Northern Europe to obtain the best results in these circumstances so far as veterinary hospitals are concerned. Among reasons that contribute to the desirability of some sort of overhead cover for sick horses, there stands out prominently the fact that it is not reasonable, humanly speaking, to expect men to give to patients standing in the open and wet weather the individual care and attention which are essential to successful veterinary work. Moreover during the winter months, at least, covered accomodation is absolutely necessary for the adequate treatment of mange which, has already stated, forms a constant and considerable proportion of equine patients in time of war. To deal efficiently with this disease it is necessary to clip the animal all over, to wash or "dress" them frequently, and to leave them unrugged during the course of the treatment, as rugs habor infection and facilitate spread of the malady. It is evident that grave loss of flesh and condition must occur if unclipped and recently "dressed" animals are exposed day and night to wintry weather while tethered and without protection or shelter of any kind.

Condition is easily lost but hard and tedious to restore. A really emaciated animal takes many weeks and even months to recover sufficient muscular bulk to fit him for the heavy exertion of military duty at the front. The financial expenditure represented by covered accomodation for veterinary hospitals is therefore repaid in preservation of condition and consequently accelerated convalescence. In veterinary as in most other matters "time is money" as practically every horse delayed in hosptial has to be replaced in the unit whence he comes by a fit horse from a remount depot. Shelter and a moderate amount of warmth are great aids in the restoration of condition as well as in preventing the loss of it. Food has not only to build up the tissues but to maintain the body temperature, and the more is diverted to the latter service the less is available for the former. On a standard minimum food ration therefore it is important for body building purposes to keep the patient warm.

Especially during the winter in France and Belgium, when the univesal mud throws heavy strain on to gun teams and transport animals by reason of the great difficulty in dragging vehicles over the shell torn swamp-like ground, a constant stream of debilitated and war-worn horses and mules pours into the veterinary hospitals from divisions at the front. These animals for the most part are not diseased but merely weakened through loss of muscular and other tissue. For such horses the comfortable surroundings and shelter of the hospital act like magic. Except in the case of old animals, in a comparatively short period the hollow sides fill out, the coat resumes its normal bloom and the returning strength and spirits give evidence of restored vitality. These results could not be attained in double the time were covered accomodation in winter not available.

Old animals, if debility is at all advanced, recuperate slowly even under the best conditions, so slowly indeed that it is often economically necessary to destroy them rather than to keep them until again fit for work. This lack of resiliency in the old animal renders it most undesirable to purchase for war purposes any horse that has passed the prime of equine life. The period of a horse's life during which he is at his best for

military purposes is very brief. If under six years of age he is highly susceptible to all forms of equine contagious disease and stands the hardship of a campaign badly. If over twelve years although resistant to contagious disease he has generally lost the elasticity and recuperative powers necessary to enable him to "pick up" quickly after a severe bout of work. Therefore it is that military veterinary hospitals receive an undue proportion of the old horses of an army especially in the winter months. It would be ungracious to proceed to any description of the buildings of the veterinary hospitals without referring to the assistance afforded in this respect by the Royal Society for the Prevention of Cruelty to Animals. This admirably organized Society has labored throughout the war to assist the Army Veterinary Service in its efforts to promote the welfare of the army horses and as a logical consequence the efficiency of the armies in the field. Naturally the objective of the Society is humanitarianism but the active practice of a genuine, if in a technical point of view irrelevant, good inevitably leads to increased efficiency, at some point or other. Benevolent societies like R. S. P. C. A. and Y. M. C. A., whose objectives at first sight may appear widely removed are in effect working towards the same end—efficiency. Science, religion, secular benevolence and philosophy, in so far as they are all striving for a positive good are aiming for the same goal, and their progress is only limited by the degree of truth on which their policy and excursions are based.

In November, 1914, the Army Council accepted an offer from the Society to start a fund for the purchase of hospital requisites for sick and wounded horses, under the title of "The Royal Society for the Prevention of Cruelty to Animals." Fund for sick and wounded horses. The Duke of Portland consented to act as Chairman of the Committee formed, in accordance with the sanction of the War Office, to work in close co-operation with the Army Veterinary Department and supplement the recognized supplies for Army Veterinary Services.

This fund has up to the present collected over 100,000 pounds which has been spent on building Veterinary Hospitals as required, supplying special horse tents, horse drawn ambu-

lances (for all the Veterinary Hospitals and for the Mobile Veterinary Sections) attached to each division of the British Amry besides presenting motor horse ambulances for the armies themselves. The fund has also provided Bentail corn crushers and chaff-cutters with petrol engines for all the hospitals in France, and has supplied a large number of clipping machines, hand-clippers, dandy brushes, curry combs, Vermorel sprayers, etc., as required.

The first hospital built in 1914 was for 1,000 horses and was constructed of wood and galvanized iron, with wooden mangers and wooden water-troughs. It consists of a series of buildings, each with accomodation for fifty horses and a double expense Forage Store. It was found that wooden structures required a great deal of repair, and it was also thought that in case of advance or retirement the steel constructed shelters would be more advantageous, as they could be unbolted and removed to some other situation. Therefore the other three hospitals, built very much on the same plan, but increased to 1,250, have been made of steel or cast iron throughout, with roof and center divisions of corrugated iron. The mangers of the latter are of pressed steel and run down the central divisions, and the stables are fitted with bales. The flooring consists, in the majority of cases, of ashes and railway sleepers though where it has been possible to make them they have been constructed on cement. Each building has been supplied with a guttering round the eaves and has two drinking troughs, in the majority of cases made of galvanized steel, but latterly these have been replaced by troughs made of reinforced concrete. Each horse has a space of five and one-half feet, length of building one hundred and forty-four feet, with all over twenty-eight feet, minimum height eight feet, height of ridges eleven feet. The fund has also provided the hospitals with dining huts, officer's mess, and kitchens with stoves and boilers; also ablution rooms, mens' mess rooms with larder, scullery and kitchen, quartermaster's stores, bath rooms for the men, with douches. Administrative offices, consisting of commissioned officers' office, clerk's room, guard room and cells; quartermaster's office, saddlers' shops, carpenters' shops, pharmacy and stores, drying sheds, dressing sheds and stores (four to each hospital). Sergeants'

mess, sergeants' bathroom, operating sheds and forage and chaff cutting sheds with corn crushers and chaff cutters complete. The fittings for the hospitals have been complete in every detail, including, where it was considered necessary: laboratories for microscopic work, cameras for research work, sterilizers for operating purposes, dressing boxes to contain liniments, bandages, etc., for each ward.

In all cases the fund has provided the complete material and the labor has been found from the Army Veterinary Corps men themselves. This has worked admirably, because after the stables had been erected a certain number of the personnel of each hospital could, for the time being, be employed on constructing buildings under the guidance of Mr. A. H. Fass, who has done splendid honorary work in superintending the erection of the various hospitals given to the fund.

The fund also provided the necessary buildings for 500 horses at No. 1 Convalescent Horse Depot; these buildings are very similar to the ones provided for the hospitals, and they have recently been added to increase the accomodation to 750 horses. In all, hospital accomodation—including stabling for 500 horses at the Isolation Hospital, Woolwich— for nine thousand five hundred horses have been presented through this fund.

It should be pointed out that the advantage of accepting such voluntary aid is that the work can be carried out under the guidance of the Works Department, but without adding to or hampering that Department at a time when it is already overwhelmed with work; therefore the important question of accomodation for sick and wounded horses can be dealt with immediately, and does not have to wait its turn with all the other work which has to be seen to.

Another supply from the fund which has been of great use to the Corps, is that of "Vermorel" sprayers, seventy-eight of which have been issued to all the hospitals and Mobile Veterinary Sections. These are not only of great utility for dressing and cleansing wounds, but also for disinfecting railway trucks in which the horses have been brought railhead, thus preventing the possibility of spreading contagious diseases.

The fund has also presented motor-lorries for conveying fodder and other supplies to certain of the hospitals, and it is by these various aids that the utility of the fund has been established. To the Chief Sesretary of the Royal Society for the Prevention of Cruelty to Animals, Hon. Captain E. G. Fairholme, the Army Veterinary Service is greatly indebted for the enthusiastic and efficient way in which he has organized and co-ordinated the work of the fund so as to adapt its resources with a minmum of waste or friction to the immediate needs of the service.

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GLANDERS AND MALLEIN.

To describe fully the work done during the war by the Army Veterinary Service in connection with the control of glanders alone would require greatly more scope than that of this entire article.

As is now fairly generally known, glanders is a particularly deadly equine disease of insidious nature and is highly infective. Records of this disease date back to Hippocrates and Aristotle, and from earliest history it has caused important losses among horses in times of war. The reasons for its predominence in time of war are partly the same as those which cause most infectious diseases to multiply at such times, but notably a tendency to assume a virulent form when by reason of hardship or food shortage the constitutional bodily resistance of the animal is reduced. An outbreak of glanders occuring in peace among well-fed highly conditioned otherwise healthy animals spreads slowly and with difficulty, on account of the physiological resistance it encounters; in war, on the other hand, an outbreak occurring among war-worn or debilitated animals will speedily assume more serious proportions unless adequate means are adopted to check it. Fortunately an adequate means now exists in mallein, a substance composed of killed cultures of the glanders bacillus to which has been added glycerine and carbolic acid.

When mallein is injected by means of a hypodermic syringe under or into the skin of a horse affected with glanders a re-

action takes place in which a swelling forms at the site of inoculation and a marked rise of temperature occurs within twenty-four hours. If the horse is not affected with glanders no reaction occurs. As glanders may be dormant in an apparently healthy horse for months, ready to break out in an acute rapidly fatal form at any moment, the value of a means whereby the latent disease can be readily detected becomes easily apparent.

Mallein has been freely used in the present war with the result that the mortaility from glanders has been less than one percent. of the total mortality from equine disease in general. Every remount is tested with mallein as soon as purchased. Animals arriving from Canada or elsewhere after purchase are again tested. In brief, the test is applied at every period in the animal's career found from past experience to be associated with an outbreak of glanders. Last but not least animals cast and destined to be sold are tested with mallein before sale so as to avoïd the possible chance of transferring to the civilian community an infected horse that may develop acute glanders subsequently to sale and thus spread disease to the detriment of national welfare. Naturally all this mallein testing means a great deal of anxious work and drudgery. There are few duties of which the Army Veterinary Surgeon becomes so heartily sick as this incessant testing of horses with mallein. Nevertheless it has to be done and results show that for the most part it is done skillfully and thoroughly. The operation itself is practically painless, most horses take no notice of it, and there is in a healthy animal no painful sequel such as may occur after vaccination or inoculation for enteric in man.

Formerly all mallein for the purposes of the British Army was obtained from the Royal Veterinary College Laboratories in London, but at an early stage of the war it was decided that the Army Veterinary Corps should undertake the preparation of the mallein required and that the Labratory of the Army Veterinary School at Aldershot should be used for this purpose. Accordingly an officer of the Special Reserve of the Army Veterinary Corps, a trained bacteriologist, was appointed to carry out the work and matters proceeded satisfactorily till at the

height of its activity the Laboratory was turning out 80,000 doses of mallein a month. This could have been maintained, but an interesting development in the history of mallein lessened the need for the variety of mallein hitherto in use. This development occured as the result of research by French Veterinary Surgeons who discovered that a very much smaller quantity of a differently prepared mallein injected into the skin of the eyelid sufficed to give a more delicate and, in the opinion of many operators, a more certain test for glanders. The dose of the original mallein injected under the skin of the neck was from fifteen to twenty drops, whereas for the eyelid test with the French mallein about two drops are sufficient. A much finer needle is used for the latter so that the greater sensitiveness to pain of the eyelid is automatically compensated. If an animal is glandered a swelling of the eyelid speedily occurs, after injection, accompanied by a more or less profuse discharge from the eye; no reaction is seen if the animal is healthy. For some time the new mallein was all obtained from French sources, but recently the laboratory of the Army Veterinary School has commenced to prepare it and no difficulty is anticipated in turning out an equally reliable preparation of identical nature.

During the last two years only two cases have occured in which a cast army horse or mule has been found to be affected with glanders after transfer by sale to the civilian community, notwithstanding the large numbers of army animals that have been so disposed of during this period. Perhaps this fact constitutes the best evidence that could be offered of the efficiency of the mallein test and the way in which glanders among army animals has been controlled by this and other means.

HORSE AMBULANCES.

The application of horse ambulances to military purposes has been an interesting and useful feature of the present war. During peace horse ambulances have for some time past been used by the Army Veterinary Corps in connection with station veterinary hospitals but it is believed that the present war is the first in which they have been taken into the field.

Two chief kinds of horse ambulances are used at present. Motor Horse Ambulances and horse-drawn vehicles. The

motor horse ambulance was first used overseas at a busy port where the veterinary hospital was necessarily located on a height some distance from the quay. When dealing with animals sick or injured by some accident on the voyage, it was found that some rapid and powerful means of transport was desirable to convey the patients with the least possible dealy from the ships side to the veterinary hospital. Help was forthcoming in an officer from the Committee of the Home of Rest for Horses at Cricklewood acting in conjunction with the Royal Society for the Prevention of Cruelty to Animals, to supply a motor horse ambulance if the Director of Transport at the War Office would agree to allow the motor firm selected to release from combatant requirements a suitable chassis. In due course this permission was obtained, a body constructed to carry at one time two patients was fitted to the chassis, and the ambulance was dispatched overseas. Needless to say, it proved a great success.

Since then other motor ambulances have been supplied by the Royal Society for the Prevention of Cruelty to Animals as required. It has been necessary for military reasons to keep the number within low and definite limits so as not unduly to encroach upon the prior claims of combatant branches of the service of the Royal Army Medical Corps for chassis and petrol. No such considerations, however, have hindered the adequate supply of horse-drawn vehicles for ambulance purposes, and these are now included in the equipment of all veterinary hospials and many Mobile Veterinary Sections. Apart from the humanitarian aspect these motor ambulances play an important ecomonic part in facilitating the removal to veterinary hospitals of numbers of horses and mules that would otherwise have to be destroyed. Injuries to the foot bulk largely in the list of troubles to which the war horse is particularly subject. Of this class of injury the principal cause is the extraordinary liability of iron nails lying on the ground to attach themselves to and penetrate the sole and frog of the horse's foot. Most of the material conveyed to the troops overseas is packed in light wooden cases and in the process of opening and ultimately burning these, nails become distributed broadcast. Every possible effort has been made to prevent this distribution, but

military exigencies are such that this phenomenon is to a large extent inevitable. The extent of injury to the horse caused by picked-up nail naturally varies according to the degrees of penetration and the amount and nature of infective dirt carried into the wound at the time of, or subsequent to, the accident. Very often the accident causes no obvious lameness at the time and, especially in the presence of mud, the condition may escape observation until, perhpas, one morning the affected animal is found so lame as to be unable to bear any weight on the foot. This occurs by reason of the rapid formation of pus, resulting from infection of the wound, within the rigid horny capsule of the foot, causing pressure on the sensitive structures within. First-aid is at once administered by paring away the horn over the wound, liberating the pent-up discharge and applying an antiseptic dressing, but the horse remains very lame and unable to walk without much pain and distress. The question of his removal to a railway station for dispatch to hospital is solved by the horse ambulance. In this he travels in comparative ease the distance to the station, and having completed the railway journey, is again conveyed in comfort in an ambulance to the veterinary hospital, where his foot receives more particular attention and he is soon on the high road to a speedy recovery.

The cases of picked-up nail, that is the cases of injury to the foot of army horses from this cause, in France alone, number several hundred a week. Attempts are being made to devise a movable metal protection to the sole of the foot that will prevent penetration by nails without being too heavy or difficult to adjust, and it is hoped that in due course a satisfactory outcome of the experience will result. In the meantime the horse ambulance probably justifies its provision and maintenance on account of this item alone.

ARMY SCHOOLS OF FARRIERY.

Army horses working on modern macadamized roads have to be shod well and frequently if they are to remain effective and therefore at duty. A set of shoes will often barely suffice a horse in a gun-team for 100 miles of modern road work, *i. e.*, about five days constant but not severe marching.

If an army fights on its belly, it is certain that a horse does all its work on its feet, and for military purposes in Western Europe an unshod horse is useless. While the new armies formed during the first year of war were still "on paper" it was foreseen that unless extraordinary steps were taken there would be a very serious shortage in the army of men able to shoe horses. Accordingly every possible means was utilized to obtain shoeing-smiths. This was before the days of conscription and in order to get as many as possible of the experienced blacksmiths sacttered throughout the country to join the army, high rates of pay and attractive prospects of promotion were offered. This measure sufficed to relieve immediate needs but it was clear that for future purposes much more comprehensive arrangements would have to be made. The supply of ready-made blacksmiths suitable for the army was comparatively small. The motor-car by replacing horses for many purposes both in town and country had hit the art of farriery very hard and the village smithy had for some time fallen off in attractiveness to young men seeking a trade to follow. Obviously therefore the thing to do was for the army to train its own shoeing-smiths, or at any rate to get soldiers trained as shoeing-smiths in some way or other. The question of training was taken up eagerly. Wherever opportunity offered young soldiers volunteering for the work were placed under training in military and civilian forges. Classes of instruction were started in veterinary hospitals, remount Depots, etc., The Borough Polytechnic Institute, Bermondsey, gave considerable assistance by organizing large classes of instruction in cold-shoeing at Herold's Institute, Bermondsey. The great demand was for showing-smiths for Royal Field Artillery and Infantry Transport. The cavalry were fairly well off, as they were able to train, with the assistance of older farriers called up from the reserve, under regimental conditions sufficient recruits for their purposes. They Army Service Corps were also well off, as the great majority of blacksmiths coming into the army from civil life in the early months of the war were enlisted by special arrangement in the Army Service Corps. Also the Army Service Corps were in a position to undertake the training of considerable numbers of cold-shoers and shoeing-smiths in their regi-

mental forges, which were already established at most prewar military stations in this country. Presently, as might have been expected, it was discovered that a grave lack of uniformity existed in the degree of proficiency displayed by the newly trained men. Some of the new "cold-shoers," as they were officially described, were fairly useful, others proved after trial to have only a superficial and theoretical knowledge of the work. Meanwhile the rapid growth of the new armies and the necessity for quick replacement of casualties occuring overseas called for an ever increasing number of adequately trained cold-shoers and shoeing-smiths.

Briefly the difference between a cold-shoer and a shoeing-smith is one of degree, in which the latter has the advantage. The cold-shoer knows enough about shoeing to take off and nail on shoes and carry out what may be described as "minor repairs." The shoeing-smith is a complete artificer able to make a shoe as well as to adapt it to its destined purpose.

In the early summer of 1915 the Army Veterinary Department of the War Office offered to establish and organize Schools of Farriery, each school to be capable of turning out about 1,000 cold-shoers every three months. This offer was accepted and steps were taken forthwith to form three Army Schools of Farriery in this country. At the same time a small School of Farriery came into being on the lines of communication, British Expeditionary Force under the auspices of the Veterinary Directorate overseas.

The schools have all been working at high pressure since the winter 1915–16, and have given the utmost satisfaction. The system of instruction and standard of examination are uniform and each pupil must give definite proof of competency before he is "passed out" of the school and becomes entitled to the extra duty pay earned by qualified artificers. A modern army School of Farriery is a busy affair. With nearly eighty forges going, each fire serving for the instruction of about half a dozen pupils, a daily shoeing of some hundreds of horses the school is on a par with other gargantuan institutions arising out of the war. Great ingenuity has been displayed by the instructors in devising means of a dummy of artificial nature to assist in the early stages of tuition. A simple but highly

effective apparatus varying in form but similar in principle has been introduced to which the foot from a dead horse can be firmly attached. The apparatus with foot attached can then be manipulated and moved through varying angles in exactly the same way as a blacksmith manipulates a horse's foot and leg in the course of shoeing. The learner thus begins on a dummy of infinite patience and insensitiveness to pain should the former be clumsy in his early efforts to nail on a shoe.

The schools are located in the vicinity of remount depots and large garrisons so that there may be an ample supply of army horses for purposes of instruction and demonstration. The assistant instructors are largely drawn from retired and re-enlisted army farriers. In addition to tuition in the art of shoeing, the pupils go through a short course in first-aid surgery of the horse's foot, so that they may know what to do in case of need arising out of their own inexperience or some fortuitous circumstances beyond their control. Questions on this subject form part of the qualifying examination. About two months concentrated training at a farriery school enables a man of fair average intelligence and manual dexterity to qualify as a "cold-shoer." Not less than three additional months of training are needed before a pupil is qualified to pass out as a "shoeing-smith."

It is correct to speak of the "art" of shoeing. A competent farrier must be at least somewhat of an artist to be able after a brief scrutiny of a foot so to shape the glowing iron by a few blows of the hammer as to bring its curves into true accordance with those of a hoof that may and often does present abnormality of outline. A skilled farrier scorns over-precise mensuration. At most he will register the greatest breadth or length of a foot by breaking off to the required length a piece of straw to correspond with such dimension. Subsequently with only this piece of straw, and the image reflected in his trained memory to guide him he will make a shoe that on being fitted will often be found to require no alteration whatever. The Schools of Farriery cannot produce this degree of excellence after five months of training, but they can and do turn out a very useful artificer whose transition to artist is only a question of native capacity and time. In the achievement of this

end the problem of how to supply a hastily collected army of modern dimensions with a sufficiency of forge-artificers has been satisfactorily solved.

In the course of description of any form of honest endeavor the narrative is apt to take on a highly laudatory tone and thus to convey the impression that, wherever else there is shortcoming, at any rate the subject under review is perfect. If such an impression has been conveyed by the foregoing notes, it is fortunately not too late to correct it. The Army Veterinary Service, in common with all other organizations dependent for their success upon the individual efforts of human beings, contains a normal proportion of seekers for the line of least resistance, faint-hearted fighters in the struggle against disease and inefficiency. An army like a nation gets pretty nearly what it deserves in the way of scientific assistance. The vast possibilities of sanitation and preventative medicine are as yet dimly realized even by Veterinary Surgeons themselves, much less by those who have not at all considered the matter. The many hundreds of debilitated horses pouring every week into veterinary hospitals could be reduced by one-half, were the personnel of the Army Veterinary Corps and that of other arms concerned with horse-management universally alive to the prior necessity of prevention as distinct from cure of disease. In the professional tendency, inherent in most practitioners, to devote the mind principally to the "healing art" rather than to the practice and propagation of the principles of horse management, hygiene and sanitation, lies no small share of the causes that come between perfection and the Army Veterinary Service of today.

It has not been possible in the scope of this article to go closely into detail the attempt has been made rather to give a general idea of the objective and routine of the Army Veterinary service. In connection with the views expressed and the demonstration offered of what can be achieved by assisting and encouraging scientific work it is pathetic to reflect that the chief and original source of veterinary service in this country, the Royal Veterinary College of London, is struggling barely to maintain its existence. The arrival of the modern motor vehicle naturally has caused a great falling off in students

whence formerly the college derived the bulk of its income. Unassisted at the present time in any way by the State, its funds such as they are depreciated by the war, its benches depleted of students the college has indeed fallen on evil days.

The Royal Veterinary College of Ireland derives liberal financial assistance from the Department of Agriculture and Technical Instruction, and the Edinburgh Veterinary College is substantially helped by the Scottish Education Department, but the English Parent College is left to its own resources.

In comparison with the assistance that is given to medical education and all sorts of technical education it may, in view of the above facts, be fairly stated that the Royal Veterinary College has been sadly neglected. Veterinary Suregons are not wealthy men, they pursue an idealistic rather than a profitable profession and are not therefore in a position to enrich by endowments the source of their professional education, as so frequently occurs in the case of the Arts and other learned professions.

The enormous amount of valuable national service performed by Veterinary Surgeons is for the most part overlooked or hidden away in the corner of some Departmental Blue Book. Even if armies pass away and there is no more war, the flocks and the herds of the Empire will always require the assistance of the veterinary profession. A Board of Agriculture or Colonial Administration would be handicapped indeed without its veterinary advisors and executive. Assistance cannot therefore be denied to the Royal Veterinary College on the grounds that the motor car has banished for ever the national need for expert Veterinary Surgeons. To meet the argument that the present is no time for incurring further public expenditure it may be stated that the college could be kept above water by appropriating to its needs the annual emoluments paid from the coffers of the State to any one of many dispensable people holding appointments of doubtful utility but indisputable dignity.

Reprints & Translations

THE HORSE.*

AT the very outset of this great world war we find ourselves short of both cavalry, artillery, and general-utility horses. And all our so-called military experts concede the absolute necessity for cavalry on the flanks of an army or to cover a retreat. In the Boer War, in South Africa, the most expensive, aggressive war of conquest Great Britain ever made in a century the lack of cavalry to fight the Boers, who were all mounted on fleet-footed ponies, cost Great Britain more lives of soldiers and more money than all the forty-two wars waged during the entire eventful reign of Queen Victoria.

Today we are seriously hampered in our war preparations for lack of horses, and that demand can not be supplied. It was claimed by most of our so-called military experts, at the time the United States entered the war, that the aeroplane would take the place of the mounted soldier; but now the demand for cavalry is universal. In a recent number of the *Breeder's Gazette*, one of the oldest and ablest stock farm journals published in the United States, I find an editorial voicing the immediate demand for cavalry in order to win the war. From time immemorial it has been the swift mobilizing cavalry that has won battles in the critical crises of wavering battle lines. This was a vital lesson we learned early in the first battle of the Civil War, when a charge of the Black Horse

***Speech in the House of Representatives, January 24, 1918, by the Hon. I. R. Sherwood, of Ohio.**

Cavalry, of Virginia, put to rout a superior force of infantry in the first Battle of Bull Run.

And in the two-years war in South Africa, England learned a severe lesson of humiliation when 7,000 Boer farmers, mounted on Boer ponies—and neither Boers nor ponies ever saw the inside of a military academy—caused the retreat across the Tegula River of 42,000 trained veterans of England, commanded by the widely renowned General Buller.

And in the present World War it was the Italian cavalry, covering the retreat of the Italian Army from the Austro-Hungarian border to the Piave River, that saved the bulk of that army and the most valuable of artillery stores and munitions. Not only are we short of artillery but of men trained to take care of horses. An up-to-date high ranking army officer recently said:

> "The man who knows how to take care of animals in this country has become very scarce. We must provide thousands of men capable of taking care of animals and who can shoe a horse, drive a team, and adjust a pack saddle. You cannot train a horseshoer in less than four months; you can teach a man to pack or drive a team in about two months. Without horseshoers, packers, and teamsters we cannot have an army. The men who handle machine guns will be of little service unless they are taught to take care of mules. Without the teamsters we cannot have an army."

We know all the high authority—machine-motor experts—have been indulging in big display-line prophesies of a horseless age. We remember vividly of the many predictions of the machine and chemical laboratory war prophets of a horseless war; that the experts in the bird-flying aeroplanes, dropping the awe-provoking bombs, would do the terrible work on the flanks and in the rear of a hostile army, with no further use for the cavalry horse, whose swiftness in battle is conceded to be five times the velocity of a foot soldier.

This is my excuse today for exploiting the horse. Our shortage of the speed horse, the saddle horse, and the general utility horse is largely due to hostile legislation against horse-racing, the most alluring, recreative and wholesome of all the outdoor sports and pastimes. Legislation that has financially

ruined and driven thousands of expert breeders out of the business; legislation aimed at so-called gambling on the pastime, with the inevitable result that we have inaugurated prize fighting, the most brutal and degrading of all the pastimes of the people, with the nose smashers and rib crackers of the prize ring masquerading as our theatrical stars, and gambling on ring contests increased tenfold. This is my excuse for exploiting man's best animal friend in all the avenues of life, in history, in chivalry, in the holy crusades, and on the red fields of war.

WHY GOD CREATED THE HORSE.

In the domain of the utilities, in the more æsthetic field of the recreations, in poetry and song and sculpture, and on the red fields of war the horse, since creation's dawn has been the omnipresent companion and helpmate of his master—man. Let us now scan the law of the inevitable—the natural loves and instincts of man as illustrated by all history. From the ancient Pharaoh of the Exodus to General Phil Sheridan, the horse has shared the honors of war, the glamors of love, the wild witchery of chivalric tournament, and the gloom and glory of all the crusades, Christian and Mohammedan.

THE HORSE IN THE EARLY CRUSADES.

A thousand years before Christianity began the horse was one of the most potent deities of the wierd and fascinating religion of the Pagan world. The history of his achievements covers three continents and runs through ten portentious centuries of triumphs, wars, and conquests.

As a potent missionary of the Christian religion, the horse was first conspicuous at the close of the Eleventh Century. At the Council of Clermont, 1095, Pope Urban II, in the spirit of religious fanaticism, called upon the church to rescue Jerusalem and recover the Holy Land. This great appeal started the holy crusades that continued over 200 years and at one time involved all western Europe.

The first crusade (1069–1099), organized by that great plebeian, Peter the Hermit, failed because they had no horses. Nearly all his soldiers were slain by the Mohammedan Turks

in Asia Minor. The second crusade, organized in 1097, was led by Knights of the Holy Cross; and no soldier could be a knight who was not mounted, and he must also be a horseman, strong enough to wear steel armor and to wield a broadsword. On June 7, 1099, 20,000 of these crusaders reached the Holy City, Jerusalem. After a five weeks' siege the city was captured by a cavalry charge of the most reckless daring. Godfrey, the leader, wrote home as follows:

"In Solomon's porch and in his Temple our knights rode in the blood of the Saracens up to the knees of their horses."

The seventh and last crusade did not end until 1272, and while I am not here to say that the mounted cavalier with sword and spear was the true follower of the lowly Nazarene, the mailed knights of the Middle Ages were the avant couriers of that kind of Christian civilization that dominates all Europe today, and it is getting a firm grip on the United States.

In discussing the moral influence of the crusades, that eminent scholar and poetist, Daniel Cott Gilman, president of John Hopkins University, says:

"The constant contact for two centuries with the more advanced Byzantine and Arabic culture taught the crusaders many lessons in civilization."

So much for the horse of chivalry in advancing Christian civilization in Europe.

THE HORSE IN NEW WORLD HISTORY.

In the new world the horse has been a much more potent and pervading force than in the old in the evangelization of the idol worshipers of the Western Continent. Hernando Cortez, the conqueror of Mexico, as an annointed Knight of the Cross, could never have subdued the fierce and warlike Aztec nation without the Spanish war-horse of the Sixteenth Century. It may not be known that the entire force of Cortez when he successfully captured the strongly fortified City of Mexico was less than 1,000 Spanish foot soldiers and only 87 splendidly mounted knights riding powerful Spanish horses, incased in steel armor. The Aztec warriors had never before seen a horse,

and they regarded him as a supernatural terror—death dealing and irresistible.

The history of the conquest of Mexico reads like an Arabian Night's tale. Though Hernando Cortez had only a few hundred men, in two weeks after entering the capital of the warlike and powerful Aztec Empire he captured the holy sovereign, Montezuma, and took possession of the Aztec treasury, valued at six and a half million dollars, and all of Montezuma's ministers.

And what Hernando Cortez and his cavaliers did to the Aztecs of Mexico a still more daring knight and horseman, Francisco Pizarro, did to the pre-historic Incas of Peru in 1535; and he did it with his knights on horseback in armor of steel.

THE HORSE IN SACRED HISTORY.

In all religions the horse has ever been an omnipresent factor. The fascinating mythology of the Greeks, a race, in their prime, foremost in art and civilization, is full of the horse.

The Mohammedan religion is also toned by the horse. Borak was the milk-white horse that had the wings of an eagle and a human face. He carried the prophet Mohammed from earth to the seventh heaven. And the seventh heaven, in the Mohammedan religion, is the dizziest parlor in the top mansion of the blissful skies. The name is Arabic, meaning the lightning.

Haizum was one of the horses of the archangel Gabriel. Read the Koran and you will see. Hrimfaxi is the horse of night, from whose bit fall the "rime drops," which every night bedew the earth. This is found in Scandinavian mythology.

If you will look to Revelation you will see that it is the pale horse upon which death rides, and as death ends all in this world I will here end my story of the horse as a Christian missionary, with a cheerful remembrance of the Old Testament prophet, Elijah—second Book of Kings:

"And it came to pass, as they still went on and talked, that, behold, there appeared a chariot, of fire, and horses of fire and parted them both asunder, and Elijah went up by a whirlwind into Heaven."

It is evident without the horses Elijah would never have reached that lofty atitude.

THE HORSE IN CHIVALRY.

Chivalry derives its names from the French word "cheval," a horse and the word "knight," which originally meant boy, was subsequently applied to the boy when he was able to mount and successfully manage a horse. In the so-called age of chivalry the mounted knight was in war at the service of his sovereign or chief, and in peace he graced the court as the gallant of the ladies in the castle, where he shared the banquets and participated in the jousts and tournaments with which the bravest of the brave cheered their leisure.

TOURNAMENTS ORIGINATED IN FRANCE.

The tournaments of the knights on horseback, in steel-clad armor, originated in Frace. They were organized to kill time in times of peace, and against the protest of the clergy. Afterwards and during the so-called holy crusades—in the battles of the centuries—of the cavaliers of the Cross, against the legions of Mohammed, the clergy indorsed and encouraged the crusaders.

HOW CHIVALRY HUMANIZED WAR.

The age of chivalry was an age of fierce adventures and long and bloody wars, in which the horse was the chief factor; but it humanized war, inaugerated kinghtly honor, and did much to eliminate the brutal instincts which before had found vent in the butchery or slavery of soldiers captured in battle. Knightly honor; the growth of chivalry, forbade a kinght to kill another knight when he was unhorsed or had dropped his lance or called for mercy. Chivalry also did much to elevate woman to her true place as the equal companion of man. And it was distinctly forbidden in all the jousts and tournaments where knights fought on horseback to even wound a horse. In fact, the horse was the true badge of a knight. No villain or serf was ever allowed to ride on horseback or carry a lance. The horse in the chivalric age did for knightly conduct what

the horse of Pagan civilization did toward humanizing the Romans. When Nero sat above Rome Christian martyrs were taken to the arena to be devoured by wild beasts, caught in the German forests, in the applauding presence of the Roman populace. Later, under Emperor Augustus, under a gentler and more benign civilization, the chariot races, in which the horse was the main factor, supplanted the bouts in the bloody arena. And in the age of chivalry the horse did for Christian civilization what the chariot races did in Rome for Pagan civilization. He made mankind better and more humane.

WHAT CHIVALRY HAS DONE FOR LITERATURE.

The history and traditions of the age of chivalry have enriched all modern poetry and literature. The history of chivalry is a rich storehouse, of poetic material that all our modern poets have used generously to glamour and allure both fiction and poesy. Spencer, Sir Walter Scott, Longfellow, and Tennyson, have drawn plots, romances and poems liberally from chivalry, but none so successfully as Lord Byron and Washington Irving. Next to Waterloo, Byron's most thrilling dramatic poem is "Mazeppa," in which the wild horse of the Ykraine is the leading factor of the poem. Few students of English literature know that Mazeppa, lashed naked to the back of a wild horse, was a real historical character and not a fictitious hero born in the brain of the great poet. "Mazeppa," the poem, was drawn almost literally from history. Mazeppa was a knight of chivalry. He was bron in 1645 and had a knightly pedigree, standard through both sire and dam.

THE MODERN POET EXPLOITED HORSE HEROICS.

All the poets of modern times put horses under their heroes. King Richard III, according to Shakespeare, offered his whole kingdom for a horse after his game steed fell dead on the bloody battlefield of Bosworth. He could not get another horse on his offer, and thereby lost the battle and the crown, and the blood of Plantagenet was dried up forever, and the blood of Tudor came in to rule England, all for lack of a horse.

All the standard English poets were horse fanciers. Sir Walter Scott, the immortal Marmion, puts into Lady Herron's

sweet mouth the story of "Young Lochinvar," one of the most thrilling musical gems in the English language. And young Lochinvar's horse is the supreme factor of the escapade. You remember when young Lochinvar stole away the bride that was about to wed "a laggard in love and a dastard in war," he caught her on the home stretch, and throwing her willing form behind his own, astride his prancing steed, while two pairs of chivalric legs were thrilling the throbbing ribs of his game flier, the lads and lasses of the laggard bridegroom had no steeds fleet enough to follow, and young Lochinvar got away with everything.

Even Tennyson, late poet laureate of England, with all his finical fine ladyism of versification, occasionally braces up into the robust heroic when he mounts the English thoroughbred. He does this in "Locksley Hall," but his best effort by far is "The Charge of the Light Brigade." But Tennyson is hardly in the same class with Sir Walter Scott. In all the minstrelsy of Scott the horse always comes into gild the heroics, whether he sings of love or war.

And the finest dramatic poem of our Civil War is "Sheridan's Ride," written by our Ohio poet, T. Buchanan Read, in which the horse is the hero, because without that game flier Sheridan could never have turned defeat into victory in that immortal twenty-mile ride from Winchester to Cedar Creek. Have you ever stopped to think what would have become of our army that critical day had Sheridan attempted that perilous ride in an automobile with a busted tire? Could he have inspired the boys with courage anew sitting in a pulseless machine, even without a busted tire, instead of the black charger, that with foam on his flanks and nostrils red as blood and eyes flashing fire carried the courage of his great master into the hearts of the musketeers.

THE TROUBADOURS AND THE HORSE.

In the songs of the troubadours the horse is everywhere sung. Many of these songs were written by women. The troubadours were the offspring of chivalry. They first appeared in France in the Eleventh Century and sung their last lyric poetry in Spain in the Fourteenth. The troubadours

composed and sang songs, and one of the accomplishments was to play the harp or make melody of the feline intestines over the bridge of a guitar. They were the inventors of lryic poetry, devoted entirely to sentimentalism. They were often mounted when attached to courts of princes and nobles, and they sang praises to the gallantry of knights, and often indulged in rustic rhymes on the degeneracy of the clergy. Our own Washington Irving won his greatest fame in fiction imbibing the lyric songs and romances and wild witching tales of the Moslem Moors. Lyric once sung in the subtle moonlight to the black-eyed daughters of Andalusia, who danced in the orange groves of the Guadalquiver in the heroic age of the Moorish chivalry.

None of the historians are able to tell when the domesticated horse was first ridden by barbarous man, as he is now ridden to death by the soldiers of Europe in the pending war.

The ancient Egyptians, the Assurians, and the Hittites, all used the horse to war chariots, and later the Etruscans and Greeks in chariot race and triumphal processions. Neither did the ancient Egyptians ride horses. We first meet with a notice that the horse was ridden among the Greeks of the Homeric period. Just when Homer lived and loved and sung no one knows, but Heroditus, the oldest of the Greek historians, places Homer's fitful days on earth as 400 years preceding his own, and we read that Heroditus was cavorting around the ancient cities of Memphis, Heliopolis, Athens, and Babylon about 430 years before Christ. There were no metropolitan daily papers or horse papers in those desperately wicked old times in Babylon, and it is nowhere recorded how Herodotus was mounted, or whether he was mounted at all.

THE HORSE IN MYTHOLOGY.

Scandinavian history is full of the horse and so is Scandinavian mythology. Abakur, the favorite war horse of King Sunna, was so called because the word Abakur means in the Scandinavian language " A hot one." Hence, the term "hot stuff," as applied today to an extreme speed trotter, may be a term of Scandinavian origin.

Arion, which is the Greek for war horse, was also a flyer. He was the horse of the giant Hercules, given to Adrastos. He ran with incredible swiftness, and this is why the Greeks deified him.

And the fascinating and picturesque and mysterious religion of ancient Hindustan is full of reference to the horse. The marvelous prophet Buddha was the greatest horseman of his time. His favorite horse was Kantaka, a pure white stallion, that is thus described in the "Sacred Books of the East." "A gallant steed, white as the foam of the sea, full maned and flowing tail. Head like the king of parrots, belly like a deer, breath like the dragons, wide forehead, claw-shaped nostrils, and eyes like the gazelle."

After the lapse of over twenty-five centuries Buddhism still stands first among the four great religions in the number of its devotees.

Our Aryan ancestors on the plains of India sang the Vedic hymns even before the epics of Homer, celebrating the horsemanship of the Greeks and Trojans, before they were voiced by human speech. The Vedic gods are thus sung: "Riding in chariots, charged with lightning, resounding with beautiful songs, and winged with horses."

Ancient Rome was also aglow with the war horse, even back to the dimmest of her early days. Incitatus was the favorite war horse of the cruel Roman Emperor Caligula. He made him both priest and consul, and he had an ivory manger and drank wine (as did priest and consul) out of a golden pail. The word Incitatus, in stately latin, stands for "Spurred on." Evidently he had speed.

Celer, the favorite horse of the Roman Emperor Verus, was fed on almonds and raisins and covered with royal purple and given a marble box stall in the imperial palace. Bucephalus, the favorite horse of Alexander the Great, would allow no one to mount him but his royal master, and to him he would always kneel. Alexander built a city for his mausoleum, which he named Bucephalus in his honor.

Flying Pegasus was one of the most brilliant of the Greek gods. Pegasus is represented as a winged horse that was always fed and watered by nymphs at springs and fountains.

He was the genius of poetic song and always appeared to the Greek poets as the inspiration of the dizziest poetic effort. It was the beautiful goddess Eos or Aurora, the personification of the morning dawn, "Who shot the Orient through with gold," called by Milton the "rosy-fingered morn," that rode the winged horse Pegasus. She rode him in the rosy blush of morn from the earth to high Olympus, the home of all the gods.

We learn that the god Neptune controlled all the waters of the great ocean (the Mediterranean Sea being the only ocean the Greeks knew) and that he created the horse. Homer in his Iliad sings of Neptune thus: "He yokes the chariot to his swift steeds, with feet of brass and manes of gold, and himself (Neptune), clad in gold, drives over the waves."

Professor Murray's Manual of Mythology, speaking of Neptune and his sea horses, says: "The sea rejoices and makes way for him. His horses speed lightly over the waves and never a drop of water touches the brazen axle."

This seems like an improbable horse story, but no more improbable than "Billy" Sunday's statement that he has driven the devil out of Washington.

THE HORSE IN THE RECREATIONS.

For nearly half a century nearly all our preachers with a few notable exceptions, Rev. Henry Ward Beecher and Rev. T. Dewitt Talmadge, have been denouncing horse racing as immoral and have been largely instrumental in putting this wholesome and recreative pastime under the ban of hostile legislation.

A very eloquent Chicago preacher, good intentioned and on the right track in denouncing an extravagant champagne supper of the "400" after the horse show, charges the horse show with the dissolute innovation. Here is where the learned divine is unlearned. The banquet after the horse show is not new, neither is there anything particularly new in the horse show. The modern horse show is a very old love that has come back in different guise and environment. And the after-feast of the so-called swell set, with the effervescent spirit in the champagne, is not new. Over twenty centuries ago in Rome, after the victorious charioteer had put away their billhooks, the Roman senators and consuls and captains of the Pretorian

guards, who had won coin on the races, stamped with the phiz of Cæsar, adjourned to the room Apollo, where feasts were spread more lavishly than any dilettant midnight supper of our "400" after the horse show. Lucullus, a Roman consul, not half as well fixed as either Morgan or Armours, or even Thomas W. Lawson, gave a wine supper to the conquering soldier Cæsar and the more pompous Pompey, in which the brains of 100 peacocks and 500 nightingales were served as a delicacy in the room Apollo, and his wine bill alone was $6,500. If our Chicago preacher had said that human nature has changed but little since the Pagan of 2,000 years ago, so far as the habits and tastes of notable men are concerned, he would have come nearer to the bull's eye.

MOST FAMOUS WAR HORSES.

The Assyrian sculptures are the most ancient and are estimated to date some 4,200 years before Christ. And these sculptures contain more representatives of horses, caparisoned and equipped to ride, than of men.

THE FIRST VERIFIED WAR HORSE.

The first real horse that is fully verified as a war horse, or a horse of the heroics, is Bucephalus, the favorite war horse of Alexander the Great, who was born 325 years before Christ. Evidently the Macedonians were breeding horses for quality, as Plutarch, one of the earliest of reliable historians, says that Bucephalus was offered to King Philip, the father of Alexander the Great, for thirteen talents, or $12,500. It is not my purpose to mention any of the famous war horses of the Pagan world, except to note the fact that Bucephalus was the first war horse of heroic quality to get into current history.

THE HERO HORSES OF MODERN WARS.

Let us now skip 2,000 years of man's constant warring, including the so-called age of chivalry, and start our brief story of the horse heroics with the dying years of the eighteenth century.

If I should name six of the most famous hero horses of the Nineteenth Century, I would mention Marengo, the favorite

war horse of Napoleon; Copenhagen, the favorite of the Duke of Wellington; Cincinnati, the famous war horse of General Grant; Traveller, the noted war horse of General Robert E. Lee; Lexington, the horse General Sherman rode in the Atlanta campaign; and Winchester, the game and fleet black stallion that carried General Phil Sheridan from Winchester to Cedar Creek, twenty miles, that gray October morning in 1864. Winchester has the unique distinction of a continental commemoration in a dramatic war poem, and the further distinction of having his master for a biographer.

George Washington was a tried and capable soldier in the old French war, so-called of 1755, fighting on the side of England. When Washington, then a young colonel, accompanied the English commanding general, Braddock, in the old French war, he took with him three magnificent horses — English-bred hunters—from his Virginia estate. One of these horses, a dark gray stallion, named Greenway. In a fierce battle fought July 9, 1755, General Braddock was killed and his army defeated. Colonel Washington was his aid-de-camp. Braddock lost five horses shot from under him, a world's record, as I believe, and Colonel Washington had two shot under him. Writing of the battle nine days later at Fort Cumberland, to his brother John, Washington says:

"I have been protected by Providence beyond all expectation. I had four bullets through my coat and two horses shot under me, and yet escaped unhurt."

When General Washington left Virginia, June 30, 1775, to take command of the Continental armies, than at Cambridge, Massachusetts, he took with him five horses of his own breeding. His favorite was a magnificent bay stallion, sixteen hands high. When General Washington made his first appearance at Cambridge mounted on this magnificent horse, he enthused and charmed not only the army but the motley throng of revolutionary patriots gathered there to greet for the first time the hero of the epoch.

Before the close of the war, Washington acquired by gift and purchase seven other war horses. Fairfax was the name of the horse Washington rode the day he took command of the

army. At the battle of Trenton Fairfax was so badly wounded that Washington had to abandon him. At the battle of Monmouth, June 28, 1778, Washington rode a white horse—Blue Skin—presented to him by Governor Livingston of New Jersey. The day was excessively hot, and the heat and terrors of the fight killed Blue Skin. Washington then rode to the end of the fight that day a magnificent chestnut mare with flaxen mane and tail, called Dolly—rather a tame name for a battle horse. Another of Washington's favorite war horses was a light colored sorrel, sixteen hands, with a white face and four white legs. This stallion was a gift from Governor Nelson of Virginia, and Washington named him Nelson in honor of the donor. This horse lived to the end of the war, and General Washington rode him on the day of the final surrender of Lord Cornwallis, October 19, 1781. After the war Nelson led a life of ease at Mount Vernon. He survived his immortal Master and died at the remarkable age of thirty-six years. Thomas Jefferson often said that Washington was the greatest horseman of his time.

THE WAR HORSES OF NAPOLEON.

Probably the most famous war horse of the Nineteenth Century was Napoleon's Marengo. And horse lovers will wonder why it is that in all the many hundred biographies that have been written—in six languages—of the greatest empire builder of modern times so little has been said of the famous horses that carried him to victory in so many great battles.

We have the authority of Louis Napoleon, who said at Chiselhurst in 1872 that Marengo was the favorite horse of this great captain of the French. He was an Arab stallion captured from a Mameluke chief during Napoleon's Egyptian campaign. Marengo was about fifteen and three-quarters hands high, of very high style, and almost white. He was seven times wounded in battle. Napoleon rode him last at Waterloo, where Marengo was shot in the left hip. He, too, like Nelson, survived his master and died at the age of thirty-six years. Napoleon rode Marengo in the following great battles: Marengo, Austrelitz, Jena, Wagram, in the disastrous Russian

campaign, and at Waterloo. Another war horse of Napoleon was an Arab stallion named Ali. On the downfall of Napoleon a French gentleman purchased Marengo and another well tried war horse of Napoleon, named Jaffa, and transferred them to his estate in England.

On the 16th of May, 1797, Napoleon rode his famous war horse Marengo to the top of the bell tower of St. Mark's Cathedral in Venice, that he might signal to his fleet in the bay that the proud Queen of the Adriatic Sea had surrendered. This bell tower is 333 feet high, 45 feet higher than the lantern above the great central dome of our national capitol. With the exception of the fiery chariot horse that Elijah rode up to heaven, this is the most remarkable feat of dizzy-headed horsemanship ever recorded in either sacred or profane history. Napoleon had nineteen horses shot under him—the world's record.

Another famous horse that has been preserved true to life form is the war horse Stonewall Jackson rode the day of his tragic death. This horse is now the central attraction of the relic room of the Confederate Soldier's Home in Richmond, Virginia.

THE FAMOUS WAR HORSE OF THE IRON DUKE.

Copenhagen won his fame as the horse the Duke of Wellington rode at the decisive battle of Waterloo—a battle that ended the conquering career of Napoleon and gave enduring fame to the Duke of Wellington. Copenhagen has inspired more animal hero worship than any horse in all history, ancient and modern. Copenhagen was a powerful chestnut stallion, sixteen hands high, an English thoroughbred, a grandson of the famous race horse Eclipse. The Duke of Wellington bought him in 1813, paying 400 guineas for him, or $2,000. His magnificent form, style, and high quality is indicated by this price.

At four o'clock June 18, 1815, the day the great Duke and Copenhagen won immortal fame, Wellington mounted Copenhagen and was in the saddle continuous for eighteen hours. And when the day was done and the Duke had held his his-

toric interview with the Prussian Field Marshal Blucher, the Duke dismounted and turned Copenhagen over to his orderly.

It will be remembered that the English Government presented the Iron Duke with a splendid estate for his good day's work at Waterloo. The Iron Duke's last act before leaving Strathfield, a few days before Copenhagen's death, was to walk out to his paddock and pet the great war horse who carried him to immortality at Waterloo. The Iron Duke's eldest son, known as the second Duke of Wellington, erected two monuments, one to the Duke and the other to Copenhagen, both of Italian marble. The monument to Copenhagen stands under the shadow of a large Turkish oak on the estate presented to the Duke, where the famous horse was buried, with this inscription:

"Here lies Copenhagen, the charger ridden by the Duke of Wellington the entire day at the Battle of Waterloo, Born, 1808; died, 1835."

During the Civil War I saw nearly all the commanding generals of the Army of Ohio, the Army of the Cumberland, the Army of the Tennessee under fire. I saw General Hooker several times under fire, once at Resaca. I saw him in the full uniform of a major general, yellow sash and all the plumes, riding at the extreme front, almost abreast of our advance skirmish line. He was mounted on a powerful high-headed bay stallion, red nostriled and furious, the most daring and inspiring figure I ever saw on a battlefield.

GENERAL JOHN A. LOGAN

was the incarnation of vital energy and reckless courage. I saw him ride at the front to Atlanta and rally the staggering battalions, after the death of General McPherson, in that fierce conflict of the 22d of July. Logan rode that day his famous war horse, Black Jack, a coal-black horse that he rode in many battles. Black Jack was poisoned by the political enemies of General Logan, in Southern Illinois, after the war, during a heated campaign. They fed Black Jack a pound of ground glass.

I saw General McPherson as he rode to his death at Atlanta. Next to General Joe Hooker, he was considered the finest mounted officer of our army. I saw him often under fire during the Atlanta campaign, always splendidly mounted.

I saw General Sherman under fire at Atlanta and at Kenesaw Mountain. His favorite horse was Lexington, presented to him by admiring friends when he commanded the Department of Kentucky. General Sherman was never an impressive figure on horseback. As he rode through our lines on the march during the Atlanta campaign, sometimes at midday and sometimes during the midnight march, he always rode with bowed head in fatigue uniform.

GENERAL JAMES B. STEEDMAN.

The first distinguished soldier I ever saw under fire was General James B. Steedman, then colonel of the Fourteenth Ohio Volunteer Infantry, in the battle of Philippi, the first battle of the Civil War. He won his twin stars in the fiercest part of the Chickamauga battlefield, and at the most critical period of the conflict. It was here that General Steedman snatched the flag of the One Hundred and Fifteenth Illinois from the hands of the color sergeant, when the regiment was in retreat, ordered the "About face," and "Follow your General." The regiment obeyed, and Steedman spurred his war horse up the death-swept slope, carrying the flag. A few leaps into the hell of fire and the horse was shot dead and General Steedman was thrown violently far over his head and severely stunned. But he was too game to leave the field. The horse he rode at Chickamauga was a magnificent bay gelding of commanding style, over sixteen hands high. He was captured at Mills Springs in the battle in which the Confederate General Zollkoffer was killed. Hence this horse, that died the hero's death at Chickamauga, fought on both sides of the conflict.

GENERAL PHIL SHERIDAN.

General Sheridan's ride and rally of the retreating army at Cedar Creek does not rank in importance with General Steedman's forced march and saving service to the Army of the Cumberland at Chickamauga, but Steedman had no poet and

Sheridan had one inspired. The greatest dramatic poem of the war, written by that Ohio poet, T. Buchanan Read, could never have been inspired except for the fleet stallion that carried General Phil Sheridan from Winchester to Cedar Creek that gray October morning in 1864. He rode a coal-black stallion, over sixteen hands high, three-quarters thoroughbred. After the battle he was named "Winchester." Before the battle he was called "Rienzi."

GENERAL GEORGE A. CUSTER.

General Custer, mounted, was an inspiration. He was a devotee of the horse and was always talking about his war horses. From the time he left West Point to join the army, in the Civil War, until the close of his eventful life in June, 1876, his daily life was largely on horseback. Probably the man never lived whose endurance in the saddle was greater than his. The favorite war horse of General Custer was a brown horse, called "Dandy." He was fifteen and one-half hands high, a compact, muscular horse, fine head and neck. He marched in the ranks of Custer's little army of daring troopers on June 25, 1876, against the confederated tribes of the Sioux, that terrible day of the massacre of Custer and his men, in the valley of the Little Big Horn, and was shot through the shoulder. He lived, however, and was sent to General Custer's father at Monroe, Michigan. The horse was the only living being that survived the Custer Massacre.*

GENERAL U. S. GRANT.

I first saw General Grant mounted near Raleigh, North Carolina, at the grand review of Sherman's army, after the final surrender of all the armies of the Confederacy. General Grant was never a showy soldier on horseback, like Hooker, McPherson, or Custer. He was too short-bodied, square shouldered, and short necked to make a picturesque figure on horseback. His most famous war horse was Cincinnati, presented to him by some of his admiring Ohio friends at Cincin-

This is incorrect. The sole survivor of the Custer Massacre was Comanche, the horse that was ridden by Captain Miles W. Keogh. He lived for many years and was never allowed to be ridden. On his death, his skin was stuffed and is now in the Museum of the Kansas University.—*Editor.

nati previous to his taking command of the Army of the Potomac. Neither was Grant a theme for the song poets of the war, like Sheridan and the yellow-haired Custer, or General Lee, Stonewall Jackson, or Albert Sidney Johnson, of the Confederates.

GENERAL PAT CLEBURNE.

The two Confederate generals that I saw nearest in both life and in death I saw in that desperate charge at Franklin, November 30, 1864. These two were General Pat Cleburne and General John Adams. General Cleburne was the most dashing division commander of Hood's army. General Adams and his horse fell at the left front of my command and General Cleburne a few yards to the left. My mount, a crow-black mare of high mettle—Firefly—that I had ridden in twenty battles, was shot about the time that Cleburne fell. She reared high in the air and fell with a stunning thud. But I was young and spry then and up again in time to be at the culmination of the charge—the awful clash of hostile bayonets in that ghastly carnival of blood.

I have corresponded with a number of Confederate soldiers, including Captain Sykes of Aberdeen, Mississippi, who served on General Cleburne's staff at Franklin, but could get no information of his war horses. I have also some lurid and enduring battle memories of General "Pap" Thomas, Burnside, Stanley, Scofield, O. O. Howard, A. J. Smith, Rosecrans, Slocum, McCook, Buttergield, Stoneman, Couch, Opdyke, Hobson, Cox, and many others.

It is worthy of mention that the city of San Antonio, Texas, presented General Pershing with a magnificient saddle horse when he left to take command of all our armies. General Pershing, mounted on this horse in Paris, created the wildest enthusiasm and the city of Paris presented General Pershing with the finest war horse (French breed) that money could buy. It was largely due to these two magnificient thoroughbreds that General Pershing was made the popular idol of the French Republic.

THE HORSE IN THE HEROICS.

From time immemorial the horse has been immortalized with his immortal master. He has been perpetuated in stone

and iron and bronze with the poets, philosophers, and soldiers of the world.

In Berlin it is Frederick the Great and his horse.

In Trafalgar Square, London, it is Lord Wellington and his horse.

In Paris it is Napoleon and his horse.

In our National Capitol it is Grant and his horse, Jackson and his horse, Sherman and his horse, General Logan and his horse and glorious old "Pop" Thomas and his horse.

In Richmond it is Washington and his horse, Robert E. Lee and his horse, and Stonewall Jackson and his horse.

On the obelisks of dead Egypt, on the Arch of Trajan at Rome, and the arch of triumph that Napoleon built in Paris to celebrate his victories, the horse and his hero rider are multiplied on every ascending circle.

The Old Testament prophetess Miriam, taking her timbrels to swell the song of triumph which Moses gave to the poetry of the ages, in celebrating the drowning of Pharaoh and his cavalry in the Red Sea, says:

"Sing ye to the Lord, for He hath triumphed gloriously. The horse and his rider He hath thrown into the sea."

You will notice that the inspired prophetess gives the horse first mention, over the soldier, doubtless on his merits, as the more humane of the two.

Darwin does not tell us in his great work on the evolution of the human race the number of years which elapsed between the development of the man-like ape and the ape-like man, but since history was born in the womb of dead centuries, we know that the horse with hoofs has been co-existent with the devil with hoofs. Professor Leidy, very high authority, says "The prehistoric man had a prehistoric horse for companion." We have the same authority for the statement that the horse in a wild sate existed on this continent long before Columbus discovered America. Probably the prehistoric man and the prehistoric horse were cavorting over the hills and through the valleys of the American continent long before Adam and Eve were browsing the apple blossoms in the Garden of Eden.

The trend of all Christian civilization from the Pharaoh of the Exodus to General Phil Sheridan is to paint the horse in the heroics. In the glamors of war, in the wild witcheries of chivalric missions to Jerusalem, amid the gloom and glory of the holy crusades, in the conquests of Mexico and Peru, and in all our modern wars the horse is everywhere a potent and puissant factor. And in the peopling and advancement of the United States, before the advent of steam and electric motors, the horse has ever been recognized as man's greatest helpmate.

Nowhere is the horse of the heroics more conspicuous than in sculpture. Sculpture beats history and is more potent than books, which only speak language. Some twenty languages have passed into the grave along with dead nations, while the monuments and statues and tombs built by these dead nations still stand. The Roman Empire is dead and the Roman race has died out of Italy, but the heroic statue of Cæsar mouned on his war horse crossing the Rubicon still stands. The Latin language is dead, but the arch of Trajan and his horse still stands. Napoleon is dead and his empire is dead, but the arch of triumph that the Great Corsican built in Paris to celebrate his victories, with the horse and his hero rider multiplied on every ascending circle, still stands. The ancient city of Moscow, once the templed capital of the Russian Empire, has its most forceful reminder of its past in the heroic statue of Peter the Great and his horse.

Old Egypt, when in the golden age of her best civilization, was devoted to the horse. Her pyramids, which are still standing, ages after her civilization has perished, are silent witnesses that the early Egyptians were patrons of man's best animal friend.

And China, whose history, both heroic and mythologic, outdates all the civilization around the world, once held the horse sacred above all the other animals. The Chinese account of the creation of the world beats all the world's records. The sacred books of Confucius claim that 2,267,00 years elapsed between the time when the powers of heaven and earth united to produce man, and of course, that man was a Chinaman.

Professor Starr of the Chicago University, in his valuable book entitled "First Steps in Human Progress," discusses in a

cursory way early Arabic civilization. He says in his book that as far back as Egyptian records go we find the horse in use, and in China are records of his presence and use as a tamed animal for thousands of years.

The biological student of the real human essence calls health the full and free manifestation of life. The life that is worth living is the life that is full of vigorous, healthy enjoyment. Of all the games to amuse and entertain, the horse furnishes the most recreative and the most morally wholesome. Our mental and physical lives are indissolubly linked together.

Some men imagine themselves moral reformers when they are only solemn and morose from a torpid liver. A torpid liver may promote indigestion, but never a high moral inspiration.

We shall always have machine motors, as we have wax flowers and crockery dolls and paste diamonds. But wax flowers will never shed fragrance on the bosom of a divine woman like the God-blown blossoms, and crockery dolls will never take the place of real babies; neither will the counterfeit blaze of paste diamonds ever mock successfully the brilliant rainbow tints of the real gems. And the live horse, the horse of history and poetry and scuplture and the heroics, will ever remain man's best and most welcome animal friend. The horse stands for good health, for life that is full of life, for pure air and sunshine; and let no lean-headed, crimpled-mouth claquer masquerading as a teacher of grim gloom and between us and the sun. In all countries and in all ages the horse is inseparately associated with human history and development. No other animal has such omnipresence and no other animal has ever exerted such a potent force in the evolution of the human race. Sculpture is radiant and glowing with monuments and arches and frescoes commemorating heroes, poets, prophets, and great generals who were devotees of this most alluring and beneficent of all God's best gifts to mankind.

The best and widest field for reformers today is to aid in the repeal of all restrictive laws that are dead and have never been enforced and to help us learn the lesson that all history teaches—that you cannot legislate virtue in the hearts of men. The only way to inculcate virtue is to have the teachers practice it. A boy is like a calf. When he gets full of the milk of human

kindness he wants to kick up and play and give vent to the life that is in him; and the man is only the developed boy. Some men are never developed.

The bicycle, that was a crazy-headed fad twenty-five years ago as a recreative motor, left us a heritage of some six distinct nervous and spinal disease, with no counter benefits; and the auto, more useful, more recreative, more alluring, killed more human beings last year than the horse in a century.

I am here not to exploit the war horse exclusively, but the horse of the recreations, the horse of peace, the horse that carries his master in the exhilaration of the wind, along pleasant valleys, by running brooks, and meadows green with verdure, by woods vocal with the song of birds, to make him forget his nervous worry over business cares and catch an appetite and the serene joy that awaits good digestion and a conscience devoid of guile. I still hope that the live horse will ever be the most wholesome recreative factor for the live man; and he is only good when alive, not, like the miser of the pig—no good to the world until after death.

OUR WAR WITH GERMANY.*

IX.

(November 14th—December 4th.)

THE change in publication date of *The North American Review* rendered necessary by the difficulties of distribution encountered under war conditions, makes our ninth monthly review of "Our War with Germany" coincide with the close of the eighth calendar month of American participation in the great struggle. It has been a month of steady progress in the chief task before this country, that of preparation for the real field work that is yet to come, but there has been no announcement of any conspicuous achievement by American forces in that period. Just at its close official publication was permitted of the news which had been whispered about among the knowing insiders for several weeks that the so-called "Rainbow Division" of National Guard troops was safe in France. This division is composed of men from practically every State in the Union—hence its name. It was transported across the Atlantic without the loss of a man, and without any untoward experience. Announcement of its arrival was withheld by the authorities in this country until the news was passed by General Pershing's censor.

The outstanding events of immediate importance in the war during this review period occured chiefly in other lands, and with slight, if any, American participation. One, the results of which cannot yet be measured even in estimation, was the complete collapse of government under responsible authority in Russia, and the triumph of unrestrained radicalism under the pro-German Bolshevik leaders Lenine and Trotzky. Kerensky, in flight or in hiding, seems definitely out of the reckoning as a

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factor in Russia's future, although in the maze of conflicting reports from that troubled land there continue to come some which indicate the possibility of a revival of his influence. There are reports also that General Kaledines, the leader of the Cossacks, is coming to Moscow with an army that aims at the overthrow of the Bolshevists and the restoration of responsibility in the government.

Meantime Lenine and Trotsky, having thrown all of Russia's engagements with her allies to the winds, and having published the confidential papers in the Foreign Office files, have offered an armistice to Germany and are proceeding, at this writing, to enter upon negotiations with the German representatives. Germany approaches the desired negotiation with a certain caution and reserve, which seems well grounded in view of Trotzky's announcement that every word of the negotiations is to be taken down and published, and that Germany is to be asked to answer certain interesting questions. They are not specified, but if they conform to the record of Lenine and Trotzky it can be well understood that it will be exceedingly difficult for the German representatives to answer them satisfactorily to the Russians and at the same time retain their influence in Berlin. It would be an extraordinary thing if this Russian collapse should yet prove to be a factor in fomenting disturbance in Germany.

News from the Italian front has been cheering as that from Russia has been discouraging. The Italian army that was so hard pressed when it reached the line of the Piave as to make it almost touch and go whether that line could be held or not seems now to have definitely mastered the situation. It has recovered its self-confidence and made good its stand on that river, so that the official reports from Berlin and Vienna tell of Italian rather than of German offensive actions. And just as this is written the announcement is made that the British and French reinforcements are in position along the river, and that danger of further advance by the Teutonic forces is minimized.

This news from Italy comports with the reports from the British front in France, where Lieutenant General Sir Julian Byng genuinely surprised the Germans, in the latter part of November, and threw them back something more than six

miles, in front of Cambrai, and made gains along a thirty-two mile section of his line. General Byng commanded the Canadians in their great victory at Vimy Ridge last spring. For this attack he gave the Germans no warning by way of artillery preparation. He relied on the tanks, and the dash of his men, to get through the wire entanglements and over the obstructions, and his calculations were right. Starting with a rush,and without preliminary and warning fire, on a misty morning, his men were on top of the Germans before they had an inkling of what was coming. It took the surprised Germans some time to recover, and before they got reinforcements and stiffened their defences their lines has been badly broken, many thousands of prisoners and some hundreds of guns taken.

There have been reports that General Byng got the suggestion for his charge in methods from a remark by General Pershing, soon after he went to France, to the effect that no substantial gain was likely to be attained on either side except by the adoption of new tactics. But there is no confirmation for this. There are reports which seem authentic, however, that in some of the furious fighting which has been going on in that sector since Byng's surprise attack detachments of American troops have borne themselves with conspicuous gallantry.

America's chief part in the war—outside the routine of preparation at home and in France—has been the participation in the Allied War Council in Paris. The fight on Lloyd George which was precipitated by his announcement in Paris, when on his way back from Rome, of the formation of this Council, came to its crisis just as Colonel House and his colleagues reached London. Lloyd Geroge met it squarely in a speech in the Commons. A singularly felicitous coincidence was the recepit by Colonel House of a telegram from President Wilson saying that the United States Government considered unity of plan and control between all the Allies essential to the achievement of a just and permanent peace.

The French Government which took the initial steps toward this Allied Council having fallen on one of those questions of the propriety of the conduct of a member of the Chamber

which have upset so many French cabinets, Clemenceau the "Tiger" became Prime Minister just in time to head the French delegation in the Allied Council.

The Council met at Versailles on November 29th. Colonel House having deftly suggested in advance that the Council was organized for work, not for oratory, speeches were omitted, and its deliberations were over and the members on their way home in three days. The first reports are that much of substantial benefit was accomplished, although no particulars were announced, except that an agreement had been reached for standardization of aeroplanes for allied service.

The reception to the Americans in London and Paris demonstrated again the enthusiasm in Britain and France over American participation in the war, and the readiness to receive American suggestion shows that appreciation of what our part may ultimately be.

Naval participation, in the way of convoying ships and hunting submarines, has continued in the same quiet, effective way, and although there has been a little increase in submarine sinkings in the latter weeks as compared with the first of the month, the total for the period was encouragingly low. One stirring tale of American activity was permitted to sift through the censorship. It recounted how two destroyers sighted a submarine, and first one and then the other dashed across its trail, dropping depth charges, some of which were successful. The submarine was forced to the surface, and when its crew surrendered the destroyer men endeavored to tow the submarine to port. They got a line to it, but the Germans had opened the sea cocks and the prize sunk.

Army preparation at home has seen the cantonments and camps brought nearer to completion, and the belated supplies of clothing for the men brought to such a stage that issue of woolens could be increased, especially in camps where colds and pneumonia were becoming unpleasantly frequent. Toward the close of November Surgeon-General Gorgas published the fact that septic pneumonia was prevalent in some of the camps, following an epidemic of measles. The shortage of equipment has been felt only in the camps in this country. All the men who have gone "over there" have been fully supplied, and

full supplies of everything are in reserve in France to meet all possible requirements.

The ever-present and ever-pressing problem of labor has continued throughout the month to furnish the greatest anxiety to those who are charged with responsibility for carrying out the Government program of production. The situation is one of extreme difficulty on both sides. In some lines of employment wages have either not increased at all or the increases have not been at all commensurate with the increased cost of all the necessities of life that the men and their families must buy. With costs of living what they are, and with wages generally so high, and especially with employers often endeavoring to hire men away from one another by voluntarily increasing wages already very high, it is not surprising that there should be unrest and dissatifaction among many of the men. The leaders of organized labor, as a rule, have worked in close co-operation with the Government to prevent any curtailment of production through stoppages of work. They have had some difficulty in securing compliance with their instructions by their followers. Disturbances on the part of shipyard workers on both coasts have threatened constantly, but thus far all but rather minor troubles have been prevented. The railroad brotherhoods, who secured the enactment of the so-called eight-hour law during the Presidental campaign of last year, have now submitted a demand for wage increases for the men on the eastern roads which would aggregate about $109,000,000 a year.

In a letter to Judge Chambers, Commissioner of Mediation and Arbitration, President Wilson, discussing the railroad labor situation, intimated that the Government might be forced to take over the running of the roads. Of the implied threat on the part of the brotherhood men to strike the President said: "It is inconceivable to me that patriotic men should now for a moment contemplate the interruption of the transportation which is so absolutely necessary to the safety of the nation, and its success in arms, as well as to tis industrial life. * * * The last thing I would wish to contemplate would be the possibility of being obliged to take any unusual measures to operate the railways."

Judge Chambers continued to exert himself to effect a settlement, but evry day brought only conflicting reports of what the men and the roads would agree to do. Finally, on November 19th, Fairfax Harrison, chairman of the Railways War Bond, wrote to Judge Chambers, saying: "As no interruption of continual railroad operation can be tolerated under war conditions, we are ready, should any crisis now arise, unreservedly to place our interests in the hands of the President for protection and for disposition as he may determine is necessary in the public interests."

On November 20th, the convention of the American Federation of Labor voted unswerving loyalty to the country, and a determination to stand behind the Administration until peace comes.

Two days later the four brotherhood chiefs had a two hour conference with the President at the White House. At its close they issued a statement saying: "If a situation should arise which would threaten the interruption of transporation the men would be more than willing to discuss and consider any solution of the difficulty which presented itself, doing so in the spirit of patriotic co-operation, and would undoubtedly cooperate with the Government to the utmost extent in arriving at a just, equitable as well as patriotic conclusion."

The White House also issued a statement saying that the President got from the conference "exactly the impression conveyed by the statement of the heads of the brotherhoods, namely, that the men whom they represented were not inclined to contend for anything which they did not deem necessary to their own maintenance and the maintenance of their families."

Meantime both operating and financial conditions with the roads have become well nigh desperate. Traffic congestion has become such that the Railways War Board has seriously considered the curtailment of non-essential industries. A list of 450 non-essential commodities was prepared, to which there were added 75 other commodities shipment of which might be dispensed with or postponed until the congestion is relieved. The board prepared a statement showing the enormous increase of traffic caused by the war. In the first five months of our participation in the war the traffic was 16 per cent. higher

than in the corresponding period in 1916; 50 per cent. greater than in the same months of 1915, and greater than the total traffic of any year prior to 1904. Coal movements were 18 per cent. greater than in the corresponding period of last year. There were 150,000 more cars of anthracite and 751,000 more cars of bituminous coal than last year, and still there are complaints of coal shortage. The railroads have moved 116,000 car loads of freight to army cantonments and National Guard camps, and 17,000 cars for the Shipping Board. The passenger traffic has been the largest ever known, and in addition to that the roads have carried 1,200,000 soldiers to camps, cantonments and ports. The movement of troops has involved the use of 2,750 special trains, and the camps are taking 75,000 cars of supplies every month.

On November 23d, the Railways War Board moved to secure relief without waiting for action by the Interstate Commerce Commission or Congress. A number of suggestions were made, including abandonment of competing passenger service and the pooling of all roads east of Chicago. The next day it was announced that the Board had given directions covering these suggestions, after consultation with government officials. The operating vice-presidents of the eastern lines met in Washington on November 26th to work out pooling plans. They encountered many difficulties which will demand legislative relief. They resolved on pooling all available facilities and appointed a committee of seven to take charge of the pool. This is another of the numerous violations of the Sherman law which the war has proved to be absolutely necessary, and to which the Government is a party. These war experiences may well bring to a climax the demand for the amendment of repeal of the Sherman law which began in a Presidental message to Congress twelve years ago.

In a speech at Baltimore about the middle of November Secretary McAdoo made public the startling information that the ordinary expenditures of the Government were running about $325,000,000 a month, instead of the billion a month that had been estimated. The expenditures of the War Department, for instance, had been about fifty per cent. of what had been estimated. This was perhaps only another way of ad-

mitting that the margin between what we had been doing in the way of production of supplies for our Allies and the total of our productive capacity was not as great as had been estimated. We could not spend as much per month as had been figured because we could not make as much more than we had been making as we estimated we could. Loans to our Allies aggregate more than three billions. Actual credits to them by the Treasury run $500,000,000 per month, but cash disbursements against these credits were considerably less, and of these a very large part was for purchase in this country, so that these transactions involved chiefly shifting of credits. On November 1st the United States held one-third of the world's total stock of gold.

Congress met for the regular session on December 3d, and received the estimates from the different departments for the fiscal year 1918. They aggregate something more than thirteen billions without counting any loans to our Allies. Of this incomprehensible sum the War Department asks for about ten billions.

Throughout the month Dr. Garfield, the Fuel Administartor, has been in trouble over the prices and the supply of coal. Price adjustments have been made in some cases, always up, with a view to increasing production and permitting wage increases. An increase of thirty-five cents a ton on anthracite was made to cover a demand for more wages. Labor troubles have threatened throughout the month, and there has been much difficulty about priority of shipments in order to prevent hardship. Coal production is far ahead of last year, but consumption has increased also so greatly that there is an actual shortage fo about 50,000,000 tons. Preference in shipment has been ordered generally now, covering Government orders, railways fuel, domestic requirements, public utilities and munition plants.

On November 23d, the producers of bituminous coal in Ohio, West Virginia, Kentucky, Pennsylvania, Michigan and Tennessee pooled their output, with the sanction of the Government. It was another case of war necessity and never mind the Sherman law. The Government is the only one that can

prosecute for violation of that law, and the Government is a partner in the violation.

November saw another reorganization in the Shipping Board, caused this time by the ill health of Admiral Capps, General Manager of the Emergency Fleet Corporation. He was not in good health when he undertook the task, and the overwork to which he subjected himself increased his illness so that he had to ask for relief. Rear Admiral Harris, chief of the Bureau of Yards and Docks of the Navy Department, was appointed to succeed him, Mr. Hurley, chairman of the Shipping Board, having asked for the appointment of an officer of Admiral Capp's corps to succeed him. An announcement of the construction program of the Shipping Board shows that it has in prospect 1,409 vessels of an aggregate deadweight tonnage of 8,363,808.

At this writing, President Wilson is about to deliver his eagerly awaited address to Congress.

X.

(December 4th—January 3d.)

The ninth month of American participation in the World War opened with a technical extension of our responsbilities through a formal declaration of war against "the Imperial and Royal Austro-Hungarian Government," upon the ground that it "has committed repeated acts of war against the Government and the people of the United States." The joint resolution making this declaration passed the Senate on the afternoon of December 7th, after a very brief debate, by a unanimous vote. Several Senators who opposed the declaration of war against Germany voted for this resolution. Senator La Follette left the Senate chamber while the debate was proceeding and returned just after the vote had been taken. He explained then that he had gone to his office to draft an amendment to the resolution, embodying a declaration that the United States would not agree to depriving Austria-Hungary of any

territory which it held on August 1, 1914. If that amendment had been accepted he would have voted for the resolution, otherwise he would have voted against it.

In accordance with the recommendation of the message of the President the declaration was confined to Austria-Hungary, and did not include Bulgaria and Turkey, although there was strong sentiment in both Senate and House for such inclusion. In the Senate the vote was 74 ayes and no nays. In the House, which voted a few minutes after the Senate did, there wsre 365 ayes, including the lady from Montana, Miss Rankin. One negative vote was recorded in the House, that of Meyer London, Socialist, of New York.

While the United States was thus extending the range of its war activities, and making new efforts toward the effective organization of its war resources, the peaçe talk that has accompanied all operations in Europe for many months took on more volume and a little more possible direction than ever before. This was due, in chief part, to the Russian collapse and the attempts of the Germans to secure the largest and most immediate advantage from that situation. The peace conference, preparations for which occupied a considerable share of public attention the world over for several weeks, met formally at Brest-Litovsk on December 22d. It was attended by delegates from Germany, headed by von Kuehlmann, the Foreign Minister; Austria-Hungary, headed by Count Czernin; Bulgaria, Turkey and Russia. The Russians submitted terms including (1) No annexations, and prompt evacuation of occupied territory; (2) Restoration of political independence to nations that have lost it during the war; (3) Right of self-definition for non-independent national groups; (4) Defense of rights of minorities in mixed nationalities where possible; (5) No contributions. Private losses to be indemnified from general fund contributed by all belligerents; (6) No economic boycotts; self-determination for colonies.

Pending the reply of the Teutonic delegates to these proposals the Kaiser addressed the Second German Army, on the French front, saying: "If the enemy does not want peace then we must bring peace to the world by battering in with the

iron fist and shining sword the doors of those who will not have peace."

On Christmas day, Count Czernin, for the Teutonic Allies, submitted a response to the Russian statement purporting to accept the principle of no annexations and no indemnities, but declaring that the Russian proposals "could be realized only in case all the Powers participating in the war obligate themselves scrupulously to adhere to the terms, in common with all peoples." Political independence to be restored to those nations which lost it during the war, but self-definition of non-independent peoples "must be solved by each Government, together with its peoples, in a manner established by the Constitution." Furthermore, "the protection of the rights of minorities constitutes an essential component part of the constitutional rights of peoples to self-determination." The Teutons were ready to renounce indemnification for war costs and war damages, but each belligerent must pay the expenses for maintenance of its war prisoners "as well as for damage done in its own territory by illegal acts of force committed against civilian nationals belonging to the enemy." This last clause was apparently laying a foundation for use in the case of settlement for Belgium.

As to the last clause of the Russian terms, covering colonies, Germany, being the only one of the Teutonic Allies possessing colonies, replied alone, with the assertion that "the return of colonial territories forcibly seized during the war constitutes an essential part of German demands, which Germany cannot renounce under any circumstances." Germany also declared that the right of self-determination, as far as her colonies were concerned, "is at present practically inpossible." The Russian principles of economic relations were approved wholly and claimed as their own by the Teutons.

The submission of this statement by the Teutonic Allies caused the Russians to ask for a ten days recess of the conference in order that they might submit the proposals to their allies. As this is written the cable reports that the Russian delegates have broken off negotiations and returned to Petrograd because of German insistence on holding strategic points in Poland and elsewhere.

Not a ripple was produced in Washington by this German peace move. The only opinion expressed by public officials and prominent men generally was that it was the best to follow the leadership of the President. The White House maintained absolute silence on the subject. It was obvious that the essential requirement for peace laid down in the President's reply to the Pope, when he declined to treat with the present German Government because it is not to be trusted, is not attempted to be met by the Brest-Litovsk proposal. Our European allies, having accepted the President's leadership and statement of war aims on previous occasions, seem disposed again to await his response to the invitation from Brest-Litovsk.

While our enemies are maneuvering to obtain the utmost possible advantage, by peace or otherwise, from the collapse of Russia, our own preparations for effective war making are progressing with materially increased speed. The close of the month was signalized by the issuance of a proclamation by the President, on December 26th, putting all the railroads of the country under Government control for the period of the war, and appointing William G. McAdoo, Secretary of the Treasury, to be Director General of Railroads. This action was taken under authority of the Act of August 29, 1916, the army appropriation act—which empowers the President, "in time of war * * * to take possession and assume control of any system or systems of transportation, or any part thereof, and to utilize the same, to the exclusion, as far as may be necessary, of all other traffic thereon, for the transfer or transportation of troops, war material and equipment, or for such other purposes connected with the emergency as may be needful or desirable."

The Director General was empowered by the President to perform the duties laid on him through the directors and other officials of the railroad systems, and except as the Director General's orders provide the roads remain subject to the existing laws and the regulations of the Interstate Commerce Commission, and to the orders of the regulating commissions of the various States. But the orders of the Director General are specifically made paramount.

Of utmost importance to the roads themselves was the paragraph of the proclamation providing that the Director

shall negotiate with the roads for "just and reasonable compensation for the possession, use and control of the respective properties on the basis of an annual guaranteed compensation above accruing depreciation and the maintenance of their properties, equivalent, as nearly as may be, to the average of the net operating income thereof, for the three year period ending June 30, 1917."

Director General McAdoo assumed control of the roads under this proclamation at noon on December 28th, but for the purpose of accounting the Government control did not begin until midnight of December 31st.

It has been apparent throughout the month that something of this kind was soon to come. On December 5th, the Interstate Commerce Commission submitted a special report to Congress pointing out the necessity of operating the railroads of the country in a unified system in order to solve the perplexing problem of furnishing adequate transportation during the war. Two alternatives were suggested by the Commission. One involved special legislation permitting conjoint operation under the existing management of the roads. This necessitated the repeal or suspension of the anti-trust and anti-pooling laws so far as they applied to combinations of railroads, for both Federal and State laws and in the way of such a combination of railroads as is necessary to carry out the plan. The other suggestion was for the President to take over control of the roads under the Act of August 29, 1916. The Commerce Commission suggested that if this were done Congress should provide ample return to the roads for upkeep, betterment and use while under Government operation.

The Commission advised Congress in this report that if the roads were to continue to operate under their own control it would still be necessary for the Government to assist in financing them, because of heavily increased expenses, and because of Government occupation of the securities market with bond sales for war expenses and for loans to allies. Even if the fifteen per cent. increase of freight rates asked by the roads were granted by the Commission they would find difficulty in providing adequate war service.

The railroads had been operating under a voluntary co-operative agreement effected early in April. The Railways War Board, consisting of a committee of railroad executives selected by the roads, under the chairmanship of Fairfax Harrison, head of the Southern Railway, believed that the voluntary system of unification was adequate to secure maximum efficiency. Mr. Harrison pointed out that no interest had declined, for selfish reasons, to respond to the requirements of the co-operative organization. He declared that the roads needed a Government traffic manager, to represent all Government departments and secure prompt and orderly transportation of Government traffic and avoid the excessive, wasteful and hampering issuance of preference orders, which had been the chief cause of congestion and delay in transportation. The roads also needed supplies and equipment which had been ordered and which they were ready to pay for. But priority orders were needed to obtain the 3,800 locomotives and 33,000 cars under order. Also, 2,000 additional locomotives and 150,000 cars would be needed for 1918. An increase in rates was needed to meet the increase in operating expenses, but Government aid was needed also in providing new capital for equipment.

The necessity of operating the railroads of the country in a unified system was emphasized by the inability of the Fuel Administration to prevent coal shortage and famine in different sections, despite all that could be done through priority orders and through such efforts as could be exerted in the absence of complete control. Dr. Garfield, the Fuel Administrator, told the Senate committee which was investigating the coal situation that the policy of competition which had been adopted by the United States had made impossible the employment of the railroads in one combined system, but that such employment of the roads was essential to the relief of the fuel shortage.

The first order of Director McAdoo was a telegram to all railroad presidents and directors requesting them to "move traffic by the most convenient and expeditious routes." Thus the pooling of the railroads was made effective. Mr. McAdoo asked the Railways War Board and all the co-operating committees formed under it to remain in service "for the

present." Three days later, however, he accepted the resignations of the Board and appointed an Advisory Committee headed by John Skelton Williams, Comptroller of the Currency, with whom are associated Hale Holden, President of the Burlington, a member of the old Railways War Board; Henry Walters, of the Atlantic Coast Line; and Edward Chambers and Walter D. Hines, of the Santa Fe. He also appointed A. H. Smith, President of the New York Central, to be supervisor of the trunk lines in the East and North, and Mr. Smith issued his first orderes aimed at clearing up all congestion.

Mr. McAdoo accompanied these moves by orders annulling all previously issued priority orders and abolising the authority of army and navy officers in supply and other bureaus to "blue tag" Government shipments and demand priority for them. He prescribed also the abandonment, as far as practicable, of long-haul passenger trains to and from New York which interfere with freight traffic; the common use of Pennsylvania tracks, tunnels and station in New York, for freight traffic, and the common use of railroad owned water carriers at New York and New Jersey freight terminals.

The immediate purpose of these orders was to relieve the freight congestion and put an end to the coal shortage that was nearing the famine point in and about New York City. As Mr. McAdoo was issuing these orders, C. C. McChord, a member of the Interstate Commerce Commission, was testifying before the Senate railroad investigating committee that the priority order system had increased railway congestion instead of relieving it. He said that more than half the shipments were under priority orders, and that they tended to disorganize the whole transporation system. He told of a naval officer who issed a priority order on a shipment of anchors to a shipyard before work on the ships was started. The Priority Board, the War and Navy Departments, the Food Administration, the Fuel Administration, the Car Service Commission and the Interstate Commerce Commission had all been issuing priority orders. The multiplicity of them was not only congesting the railroads, it was interfering with the industries of the country and directly menacing the success of future Liberty Loans.

Mr. McAdoo opened the New Year with an order giving

coal for New York City right of way over passenger service through the Pennsylvania tunnels and terminals in the city. Drastic interference with passenger service all over the country resulted from the efforts to relieve freight congestion. Railroad officials and Government authorities joined in impressing it upon the public that unnecessary travel was discouraged. In many ways accommodations were curtailed—by the withdrawal of chair and sleeping cars, dining and buffet cars and the reduction or withdrawal of special service of all kinds. Commutation service into New York was reduced by several roads, both in number of trains and in time of transit.

The reassembling of Congress was accompanied by the submission of the estimates of expenditures from the different departments and bureaus of the Government for the fiscal year of 1919, appropriations for which must be made at this session. These estimates aggregate thirteen and a half billion dollars. But they do not include any loans to our allies, which have been authorized to the extent of seven billions for this fiscal year. If loans to allies reach a similar sum in the next year the total of estimated appropriations will be twenty and a half billions as against $18,788,961,437 thus far this year. That figure represents the appropriations made up to date. But there is an Urgent Deficiency Bill pending that carries about a billion and a half, which will bring the total for 1918 over twenty billions. Moreover the expenditures of several supply bureaus are still considerably below the estimates, owing to delays at factories. Production generally will soon be at full speed, however, and then daily expenditure will increase accordingly.

Estimates for the War Department absorb more than ten of the thirteen billions needed for 1919. One billion is asked for pay of the men, and two billions for quartermaster's supplies—clothing, certain kinds of equipment, and transportation. The Surgeon-General wants $157,000,000 for hospitals and medicines, and the Engineers ask $135,000,000 for the equipment of engineer troops and $892,000,000 for the expenses of their field opertions. The Ordnance Bureau asks $2,672,000,000 for ammunition and guns, exclusive of $237,000,000 for machine guns. The army aviators ask $1,032,294,260 as against appropriations for this year of $739,067,766.

The Navy asks for a total of $1,047,914,027 as compared with appropriations for 1918 aggregating $1,596,936,455, with some deficiencies yet to be cared for. The Shipping Board wants nearly $900,000,000 more to carry on its great program and the Food and Fuel Administration need about double what they have had this year. Their requirements, however, are mere small change compared with those of the fighting organizations. The Army estimates for pay cover 62,000 line and 25,578 staff officers and 1,208,300 enlisted men of the line and 398,053 enlisted men of staff departments, a total force of 1,693,931 officers and men.

Congress quickly took cognizance of complaints of inefficient work in both Army and Navy organizations and began investigations covering both those departments and the Fuel and Food Administrations and Shipping Board as well. At this writing the army investigation has gone into the Ordnance Bureau and Quartermaster-General's office, and his developed a long and unpleasant story of delays and of failure to secure ordnance and other supplies with the promptness and in the quantities which the public desired and expected. The hampering effect of red tape has had a new demonstration, It developed that our men abroad are equipped with French instead of American artillery, and that we are using British rifles because we could not make our own fast enough. Our men in camps and cantonments at various places in this country are not fully supplied with rifles, have no machine guns and are short of artillery. They are not fully supplied with proper clothing, and Surgeon-General Gorgas reported that at camps which he personally inspected there was disease and suffering due to insufficient clothing. Army officers, contractors and members of committees of the Council of National Defense, all of whom have been involved in the unhappy revelations, have spent much time trying to shift blame to other shoulders. Secretary Baker, upon whom General Crozier, Chief of Ordnance, laid part of the blame for army lack of equipment, defended the army in a public speech with the remark that there were "two ways to look at the nation's war progress, what we have done and what we have not done."

"The activities of the Government departments doing war

work had to be multiplied three thousand fold," said Mr. Baker. "We had to undertake new problems on a colossal scale. These were things which the country was not prepared to do."

The investigation disclosed the fact that an enormous amount had been accomplished in the equipment of the army, and in preparation for the organization and equipment of additional forces. The story is by no means wholly dismal and many besides Secretary Baker will find satisfaction in contemplating what has been done, although it is not all that might have been accomplished.

The inquiry into naval conditions found a much pleasanter situation. The annual report of Secretary Daniels showed that the great guns for the batteries of the new battleships are in place and the new sixteen inch gun is ready for testing. The destroyers in European waters are kept supplied with all requirements. The navy has placed orders for all explosives needed and the projectile problem has been met, more plants bidding for contracts than were needed. This is in marked contrast to the army situation.

In mid-December, Mr. Daniels announced the formation of an inter-allied naval council "to insure complete co-operation between the allied fleets." England, France, Italy, Japan and the United States are represented. Mr. Daniels told the Congressional investigating committee that several hundred ships had been added to the fleet since we entered the war, and that contracts had been let for hundreds more, including super-dreadnaughts, battle cruisers, destroyers and every class of naval vessel. There are 424 ships in course of construction, not including 350 submarine chasers. The navy has over a thousand vessels in commission against less than 300 two years ago. The personnel numbers 280,000 as compared with 64,680 men and 4,376 officers when we entered the war.

On December 15th, Secretary Baker, after a long conference with President Wilson, announced the formation of a new War Council, composed of himself, the Assistant Secretary of War, General Bliss, the Chief of Staff; General Crozier, the Chief of Ordnance; General Sharpe, the Quartermaster-General; General Weaver, the Chief of Artillery; and General

Crowder, the Judge Advocate General and Provost Marshal General. The announcement said that the new council was "to oversee and co-ordinate all matters of supply of our field armies and the military relations between the armies in the field and the War Department." Skeptical Washington was inclined, however, to consider this as a promotion out of responsible work for some of the new council members, and to recall several cases among our allies where distinguished officers have been promoted similarly to posts of less arduous and important duty. A few days after this announcement Mr. Baker announced that General George W. Goethals had been recalled to active duty and assigned as Acting Quartermaster-General, and that acting chiefs of ordnance and artillery had been appointed.

The investigation of the Shipping Board disclosed a situation so satisfactory that at the close of the examination of Chairman Hurley the committee frankly asked him how it could help in the work he was doing. Mr. Hurley had said that the program is moving steadily and surely forward to successful completion. There had been some delays, as was well known, but the new organization of the Emergency Fleet Corporation for the first time gave the chairman of the Board the proper authority and fixed the responsibility where it belonged. When he joined the Board on July 27th, there were 840,900 tons of wooden ships, 207,000 tons composite and 587,000 tons of steel ships under contract. Since then contracts for 3,378,200 tons additional steel ships have been let, together with 504,000 tons additional wooden vessels. Also the Fleet Corporation has rendered financial aid to forty-two yards. This was superimposed upon a program of naval construction equal to 2,500, 000 tons of merchant shipping.

The coal investigation developed a situation of railroad congestion that prevented deliveries, although production for 1917 was much greater than in 1916. This situation, as has been shown, was the first one tackled by the new Director General of Railroads.

The investigation of the Food Administration promptly developed into a personal assault upon Mr. Hoover, the Food Administrator, by Claus Spreckles of the Federal Sugar Re-

fining Company, who accused the Food Administration of working with the sugar trust and of bringing on the sugar shortage. Mr. Hoover retorted that Spreckles was resentful because his profits had been interfered with. The Senate Committee, headed by Senator Reed, who had opposed Mr. Hoover's appointment, declined to permit Mr. Hoover to testify immediately in response to Mr. Spreckles, or to print a statement by Hoover. Thereupon President Wilson took a hand and published the statement through the Committee on Public Information. The strong flow of charges and counter-charges indicated that an old rivalry was getting a new airing.

The month heard the usual report of German intrigue, with another chapter of the Lansing serial exposure of Count Luxburg, the German Minister to Argentina. And, as usual, it saw no serious punishment for sedition or treason, or spy work. But we hope we are getting on.

XI.

(January 3d—February 6th.)

This review of the tenth month of our war with Germany is written on the last day of that month—the next day after the first public announcement in our newspapers that American troops are at last holding a sector of the line on the west front in France. How long they have been holding it before the censor permitted the announcement is, of course, not public property. Nor does it matter. The main thing is that we are now on the line, and it is a promise of the fulfilment of our hope that before the end of the war the fighting strength of the United States shall make itself felt.

This begins to look like what the average man understands by "participation" in the war. Of course we have been actually participating for a long time, in fact for ten months. There are many different methods of participation, with various economic forces that may be more effectual in reducing Germany's

power of resistance than the fighting valor of the men we now have on the sector we hold in France. We have been helping to make it a real blockade, and to cut off the numerous and devious means by which Germany obtained supplies, no matter how small the quantity, of the different materials she needed in her war making. We have strengthened our allies with money and credit, and our naval forces have borne a gallant and distinguished part in the defense of the allied transport service against the submarines.

But now we have men "on the line." There is an "American front" and the censor permits it to be known that our men are holding trenches in Lorraine. We may even particularize a little. We are almost on the German border. With a little fortunate effort we might become invaders of the enemy territory. Every day the news reports give details of the doings of our soldiers on this front, and bring inevitably the sad news of casualties—men killed and wounded, and occasionally captured. Nothing approaching the dignity or importance of a battle has occurred as yet on the American front, but our men are in the fighting, and the close of the tenth month finds us really "participating in the war against Germany."

Three alliterative subjects were the chief recipients of public attention during this tenth month—participation, peace and preparation. Strong efforts for all three have run coordinately throughout the month, but at the close the hopes for peace were not as high as they had been at different points during this time. Certain distinguished efforts to pave the way for a possible discussion of peace terms were made in this month. David Lloyd George, the British Prime Minister, delivered a remarkable speech, outlining the British war aims. He was followed in a few days by President Wilson, who, speaking to a joint session of Congress, laid down fourteen specific conditions of peace. In due course formal replies came from Count von Hertling, the German Chancellor, and Count Czernin, the Austrian premier. Neither speech offered a hopeful basis for enduring peace, and the month closed with the publication of a formal statement by the Supreme War Council of the Entente Allies rejecting the peace feelers of the Teutonic allies, and announcing that the Council had "arrived

at a complete unanimity of policy on measures for the prosecution of the war."

This announcement appeared in the same newspapers which carried that of American occupation of a part of the Lorraine front. So just as we were informed that we were actually getting into the fighting on land we were assured that the war was to go on indefinitely and that the hopes of an early peace which had been inspired by the various statements of aims were not yet to be realized.

The peace parleys which had been going on at Brest-Litovsk between the Bolshevik Russians and the Ukrainians on one side and the Teutonic Allies on the other have continued at intervals since our last review. First one side, and then the other, has journeyed back to Petrograd or Berlin as the case might be, for consultation with superiors, and to make explanation or receive orders. It has been reported at different times that each side had broken off the negotiations. But if either side ever did, it has soon repaired the break, and when the original armistice expired it was renewed for one month more on Russian initiative.

Meantime the Russians have been encountering more and more difficulties and divisions at home, and the Teutonic Allies have been progressing in arrogance and rapacity, as was to have been expected. Having at first declared their acceptance of the Russian principles of "no annexations and no indemnities," the Germans were forced to meet a practical application of the formula in the case of the Russian territories now held in German occupation. Their answer was a flat refusal. They declined to evacuate these territories, as contemplated in the first and second items of the Russian terms of peace. They said that these territories "already had local authorities who had declared in favor of breaking away from Russia, and such decision should be regarded as valid." They did not regard it as necessary to remark that these local authorities had been installed by German military forces and now function under German control. Neither the Bolsheviki nor any one else was fooled by these tactics.

On January 10th, the Teutonic negotiators solemnly announced the withdrawal of their offer to conclude a general

peace without forcible annexations and indemnities on the ground that the Allies had not accepted it. Therefore the responsibility for continuing the war rests—from the German point of view—entirely on the Entente Powers.

At this writing the Teutonic negotiators are again in Berlin for conference and there is renewed suggestion of a rupture of the negotiations.

This month opened with Mr. Lloyd George's statement of British war aims. It was made on January 5th, before the British Trade Union conference. The terms specified were closely similar to those of previous declarations. The British are not fighting, he said, to crush Germany, but it will be much more easy to negotiate peace with a liberalized Government. Belgium must be restored, politically, territorially and economically, with such reparation as can be made for the devastation of her towns and provinces. Servia, Roumania, Montenegro and the others similarly to be restored. And the British will stand by France to the death for the restoration of Alsace-Lorraine.

The Lloyd Geroge statement was accepted as satisfactory by British labor and by Britian's allies. Three days later, on January 8th, President Wilson went before Congress and delivered the most carefully itemized and specific statement of peace conditions that has come from any of the belligerent statesmen. He voiced again his distrust of the German rulers and demanded to know for whom the negotiators at Brest-Litovsk spoke—the "spirit and intention of the liberal leaders and parties of Germany, or those who resist and defy that spirit and intention and insist upon conquest and subjugation?" His program of world peace contained fourteen paragraphs: 1, Open Diplomacy; 2, Freedom of Navigation, in peace and in War; 3, Removal of International Economic Barriers; 4, Reduction of National armaments; 5, Absolutely Impartial Adjustment of all Colonial Claims, the interest of the population concerned having equal weight with Governmental claims; 6, Evacuation of all Russian Territory and such settlement of all questions affecting Russia as will give her unembarrassed opportunity for independent determination of her political development and national policy; 7, Belgium evacuated and re-

stored; 8, Alsace-Lorrain restored to France; 9, Italian frontiers readjusted; 10, the peoples of Austria-Hungary accorded freest opportunity for autonomous development; 11, Roumania, Serbia, and Montenegro evacuated; occupied teritories restored; Serbia to have access to the sea and the political and economic independence and territorial integrity of the Balkan States to be guaranteed internationally; 12, Turkey, to be assured sovereignty of Turkish portions of Ottoman Empire, but other nationalities now under Turkish rule to have unmolested opportunity for autonomous development, Dardanelles to be free for all nations under international guarantee; 13, An independent Polish State; 14, An international league for peace.

The entire Allied world endorsed the President's statement of peace conditions. British labor especially approved. In Germany it aroused furious anger, and the newspapers, which are under Government control, published it in garbled or distorted form or not at all.

Count von Hertling and Count Czernin replied to the Wilson and Lloyd George speeches on the same day, January 24th. The German Chancellor spoke before the Main Committee of the Reichstag, and the Austrian Premier before the Reichsrat. Count Hertling made his reply specific, taking up the President's terms paragraph by paragraph. To the first five he professed adherence, but explained as to number 2 that it would be highly important for England to give up Gibraltar, Malta, Aden, Hong-Kong, the Falkland Islands and other "strongly fortified naval bases on important international routes." He suggested that "practical realization" of number 5 "will encounter some difficulties." As to number 6—the evacuation of Russia—Count Hertling said that since the Entente had refused to join in the negotiations within the specified period of ten days he must "decline to allow any subsequent interference." The Belgian question, number 7 in Mr. Wilson's program, Count Hertling said "belongs to those questions the details of which are to be settled by negotiation at the peace conference." As to Alsace-Lorraine he said: "I can only again expressly accentuate the fact that there can never be a question of dismemberment of Imperial territory." Numbers 9, 10 and 11, Count Hertling left to Austria-Hungary,

with the remark that where German interests were concerned "we shall defend them most energetically." Number 12, he said, concerned only "our loyal, brave ally, Turkey." He added that the integrity of Turkey and the safeguarding of her capital "are important and vital interests of the German Empire also," and Turkey could count on Germany's energetic support. Polish question, Mr. Wilson's number 13, was for Poland, Germany and Austria to decide. "We are on the road to this goal," said Hertling. As to the league of nations, "if it proves on closer examination to be conceived in a spirit of complete justice and impartiality toward all," Germany was ready, when all the other questions have been settled, to "begin the examination of the basis of such a band of nations."

Count Czernin also made a detailed reply to Mr. Wilson, considering the President's terms paragraph by paragraph. In general the Austrian Premier was far more ready to talk peace on the Wilson basis—or sought to convey that impression. "Our views are identical," he said, "not only on the broad principles regarding a new organization of the world after the war, but also on several concrete questions, and differences which still exist do not seem to me to be so great that a conversation regarding them would not lead to enlightment and a rapproachment." Count Czernin added that this situation tempted him to ask "if an exchange of ideas between the two Powers could not be the point of departure for a personal conversation among all States which have not yet joined in peace negotiations."

But while all this looked on the surface very much as if Austria would really like to begin effective peace conversations, there was a reference to Austria's determination to stand by her allies, especially Germany, which destroyed the value of Count Czernin's otherwise ostensibly peaceful discourse. He said that Austria-Hungary, "faithful to her engagement to fight to the end in defense of her allies, will defend the possessions of her war allies as she would her own."

Which brings the peace question back to the same old proposition of beating Germany.

There was one sentence in Count Hertling's speech which disclosed the interesting fact that the attitude of the world with respect to Germany has at last penetrated German in-

telligence. He said that the conception of Germany's enemies "finds expression as if we were the guilty who must do penance and promise improvement." And he added: "The leaders of the Entente must first renounce this standpoint and this deception."

In those two paragraphs the reason is fully set forth for the unanimous decision of the Entente Supreme War Council that the war must go on. As long as Germany is correctly interpreted by that speech of Hertling's and as long as Austria will support Germany as Czernin asserted, there is nothing to do but bring up the guns, and that is just what American preparation aims at.

Meantime there have been continued reports from both Austria and Germany of domestic upheavals which may or may not portend an early collapse of their present iron control. For more than a fortnight the news reports have dealt with labor demonstrations and strikes in Vienna, Berlin and other important cities and towns of both Gemany and Austria. The workmen were represented as demanding "peace and bread." The reports from Vienna were coupled with news of the fall of the Cabinet. In Germany, where government control of the press is supreme, the conflict of reports was such as to confuse the situation. No accurate line on the extent of the upheaval was obtainable. The military forces were relied upon to put down the strikes and there were threats of shooting strikers. There were also reports that strikers were warned to go back to work or take their chances with the army. At all events German iron discipline seems to have regained the mastery if, indeed, it every was really threatened.

There have been two domestic battles of absorbing interest during the month, both connected with our preparation for a larger measure of participation in the fighting on land later. One was a fight with the forces of nature as well as of organization and inefficiency in the effort to end the transportation congestion, and by moving both coal and freight get the industry and transportation of the country once more on something like a going basis. The other was a fight that developed in the Senate and was aimed against the deadening

effects of red tape in the military organization. At this writing both fights seem to have produced good results.

The coal and transportation situation have demanded and received unremitting attention and effort. The Fuel Administrator and Director-General of railroads have had to fight not only the constant production of more freight and coal than could be transported by the railroads under existing conditions, but also an unbroken series of snow and other storms and of severe cold weather, the like of which is hardly within the memory of the oldest inhabitant.

Early in the month Secretary McAdoo, the Director General of Railroads, had an important conference with the heads of the railroad brotherhoods, and, as the newspaper put it, "requested" them to work overtime in order to help meet the shortage of labor. The brotherhood leaders expressed a willingness to work with Mr. McAdoo to maintain transportation efficiency. Mr. McAdoo thereupon announced his intention to appoint a Wage Adjustment Commission to take up the question of increased pay which the brotherhood men were pressing. Later Mr. McAdoo named Secretary Lane as head of this commission, with Interstate Commerce Commissioner McChord as another member together with Chief Justice J. Harry Covington, of the Supreme Court, of the District of Columbia, and William R. Willcox, former member of the Public Service Commission of New York.

On January 6th, Mr. McAdoo issued orders doubling the demurrage on railroad cars in order to force consignees to unload them more promptly. On the 14th he ordered that coal for domestic use and for vital public utilities should have first preference in shipment with food stuffs and coal for bunkering ships to our allies next in order.

On January 16th, the Fuel Administrator ordered coal sellers to give preference in this order: 1, railroads; 2, domestic users, hospitals, etc.; 3, public utilities; 4, bunkers; 5, municipal, county and State governments and public uses; 6, manufacturers of perishable foods.

At the same time the Fuel Administrator ordered a total shutdown for five days from January 18th to 22d, both inclusive, and for each Monday for ten weeks. This order ap-

plied east of the Mississippi and in Minnesota and Louisiana. Dr. Garfield declared that it was necessary in order to prevent a crisis and widespread suffering.

There was an immediate and angry protest from all parts of the country affected by the order. Industries everywhere declared that it was an uneconomic measure and would have disastrous affects, entailing great loss upon industry and hardship upon the working men whom it would deprive of wages aggregating millions of dollars. Dr. Garfield insisted on enforcing his order however, and was supported by President Wilson. The Senate adopted a resolution requesting the Fuel Administration to postpone the order, but it went into effect just a quarter of an hour before the Senate Resolution reached Dr. Garfield.

The vigorous efforts to relieve the coal famine in New York and the New England States were making some headway despite the severity of the weather, and this closing order gave further assistance until there was talk of rescinding the order for further Monday closing. When the order was issued more than a hundred steamships were held in port for lack of bunker coal. In the first two weeks more than seventy-five of these ships received the necessary supplies, and this greatly improved the ocean transportation situation. The fact appears to have been the industrial production of the country was greater than the available ships could transport, especially when they were delayed by lack of bunker coal.

On January 4th, President Wilson went before Congress and delivered a message urging legislation to complete and support the Federal Control of Railroads undertaken as a war measure. He asked a specific guarantee to the roads that their properties would be maintained throughout the period of Federal control in as good repair and as complete equipment as at present; and that the roads should receive equitable compensation. He recommended as the compensation basis the average income of the three years ending June 30, 1917.

The Administration Bill conforming to the President's speech was introduced in both Senate and House, and immediately encountered opposition because no limit was set for the period of Federal control. Both Senators and Representa-

tives believed that the law should provide some date for the termination of Federal control, one year, or two years after the war. Mr. McAdoo contended vigorously against such a limitation and President Wilson supported him. Both Senate and House committees voted for a time limit. The bill appropriates $500,000,000 to form a revolving fund to cover expenses of control, equipment, betterments, etc. The Administration is urging action of the bill, as a means of facilitating the flotation of the next Liberty Loan, which is scheduled to come before spring. Mr. McAdoo told a committee of Congress before which he was urging action on the railroad bill that it would be necessary to raise about ten billions before the end of the fiscal year. But not all that will be by loan.

The criticism of the War Department was accompanied by much more acrimony than developed from the fight over the railroad legislation. This situation culminated in an attack by President Wilson upon Senator Chamberlain, of Oregon, chairman of the Senate Committee on Military Affairs. Mr. Chamberlain spoke on January 19th at a luncheon given him in New York by the National Security League. In the course of his extemporaneous address he said that the War Deaprtment had "fallen down," that it had "almost ceased to function," and that there was inefficiency in every department of the government. Next day President Wilson wrote asking him if he had been correctly quoted. Upon receiving the Senator's reply to the effect that he had been quoted with substantial accuracy, the President issued a statement accusing the Senator of an "astonishing and absolutely unjustifiable distortion of the truth," and adding that the Chamberlain statement "sprang out of opposition to the Administration's whole policy, rather than out of any serious intention to reform its practice." The President referred to Secretary Baker as "one of the ablest public officials I have ever known."

This denunciation of Senator Chamberlain was surprising in view of the Oregon Senator's strong support of numerous Administration measures. It was Senator Chamberlain who handled the Food Control Bills which were not supported by Senator Gore, the chairman of the Committee on Agriculture. Mr. Chamberlain replied in a three-hour speech in the Senate

on January 24th, in which he rehearsed some of the evidence that had been given before his committee in the hearings on War Department conduct which it had been conducting for some time. It was at these hearings that the inefficiency in the Ordnance and Quartermaster's bureaus, and in other War Department bureaus was brought out.

These hearings had resulted in the preparation by the Senate Committee of two bills, one providing for the creation of a War Cabinet of three, and the other for the appointment of a Director of Munitions. Both bills were strongly opposed by the Administration and Secretary Baker. Mr. Baker had appeared before the committee in these hearings, and had defended his department, but in a way which lent color to the belief that he was not sufficiently impressed with the size and importance of the task before his department. His appearance had rather increased the demand in the committee for the legislation.

Senator Chamberlain's speech in reply to the President made a profound impression. He declared that the President did not know the truth as it had been presented to his committee, and he gave official figures to show the shortage of clothing, and the deaths in the training camps in which Suregon General Gorgas had testified there were unsanitary conditions and lack of proper clothing.

Secretary Baker promptly requested another opportunity to appear before the committee and present additional information. He did appear on January 28th, and produced a statement which made a much better effect in its showing of the accomplishments of the War Department. He did not contend that mistakes had not been made, but that when discovered they had been corrected and were not repeated. Also he declared that an immense amount of work had been accomplished, and that no army of such size had ever been raised and equipped so quickly before. He said we should have half a million men in France by spring and a million more ready to go. Afterwards Senator Chamberlain lunched with Mr. Baker, and there were indications that an agreement might be reached as to the Director of Munitions Bill. But Administration opposition to the War Cabinet measure was unremitting. Mr.

Baker did appoint a "Surveyor General of Purchases," and gave the place to Mr. Stettinius, who had been the Chief Purchasing Agent for the Allies before we entered the war. But it was pointed out that the new Surveyor of Purchases was without real authority which alone could give him solid ground for success.

By way of pleasing contrast the House Committee which investigated the Navy reported in terms of the highest praise of its work, commending its efficiency and achievements. Notwithstanding the tremendously increased demands upon it, said the report, it was working smoothly and harmoniously and with great efficiency.

Provost Marshal General Crowder announced that more than a million men in Class 1 of the draft registrants had been accepted for service, and that the yearly class of young men reaching the age of twenty-one, who will be made liable for military duty under pending legislation, will number more than 700,000. General Crowder estimates that nearly all these men will be available to meet all demands upon us for troops. So the tenth month marked substantial gain in accomplishment and real improvement in prospects.

(This record is of February 6, 1917, and is to be continued.)

Military Notes

BRITISH CAVALRY IN ACTION.

BY PHILLIP GOBBS, SPECIAL CORRESPONDENT FOR THE "NEW YORK TIMES."

THE Commander-in-Chief has mentioned the splendid work of the British cavalry in the recent fighting, and I am now able to write things which I wanted to write before, because in the first days of this battle I saw cavalry riding out to meet the enemy around about Ham and Guiscard, and afterward on patrol work below Delville Wood and Pozi res. From March 22d onward they fought, mounted and dismounted, helped to stop gaps in the line and stem the German tide, charged Germans on foot and Germans on horseback, cleared woods and roads with machine guns and rifles, rode out in patrols to reconnoiter the enemy's position, chased German advanced guards out of villages, and acted as rearguards to the British infantry. Their losses were not light, but light for all the service they did in the hours and days and nights of grave peril. On March 22d, they dismounted and held the Ollezy-Ham line when the enemy was bearing down in vast numbers, and some dragoons fought all night, covering the withdrawal of the tired troops. They could leave only a few men to look after the horses, and it was the men of a labor battalion who one night led their horses to the next position, each man with fifteen horses tied together on one rope, which was not an easy job on a dark night, with poor, frightened beasts.

The British cavalry had hard fighting around Guivry, and on the 26th they moved up to help the French, who were meet-

ing the enemy hordes bearing down on Noyon. The British squadrons had their left flank exposed when they were ordered to hold Porquericot Ridge, on which the enemy was moving. They went at full speed, pressing their horses forward to something like a gallop, and the infantry soldiers cheered at the sight of this living tide of fine men and fine beasts streaming over the slopes. The enemy was already on the ridge, but the cavalry held the southern side of it, stopping the enemy from gaining the height.

When the allied line withdrew to the Driette River, it was necessary for the cavalry to conform to this movement, which they did with the enemy again on their left flank, so that the Lancers, Hussars, and Canadian cavalry were under furious machine gun fire.

A CHARGE THAT RANKS WITH BALAKLAVA.

After supporting the British infantry near Marcelcave dismounted cavalry, with one mounted squadron, made a gallant attack through Moreuil Wood and cleaned out the enemy. Afterward, however, it was again filled with Germans who had many machine guns, and the cavalrymen were again asked to clear it. It was a perilous task, for two battalions of the enemy held the wood, and their machine gun fire swept through the glades; but in this wood of Moreuil on the morning of April 1st British cavalry performed a feat as fine as the Balaklava charge, and this also should be made into a ballad and learned by heart.

Twelve hundred men who had been riding through the night went forward in three waves and charged that dark wood next morning at a hard gallop. The first wave rode to the edge of the wood, and the second to the center, and the third wave went right through to the other side, riding through the enemy and over his machine guns and in the face of a hail of bullets from hidden machines. They cleared the wood of Moreuil and brought back prisoners and thirteen machine guns, but there were many empty saddles, and many men and horses fell.

That was the finest exploit of the British cavalry, but elsewhere it did splendid work, and everywhere the men were

gallant and cool, as when some of the dragoons came under a heavy shrapnel fire near Gentille, and many men had to shoot their wounded horses to put them out of their agony.

CAVALRY PLAYED BIG PART.

BRILLIANT WORK DONE BY BRITISH MOUNTED TROOPS IN BIG DRIVE.

By the Associated Press.

WITH THE BRITISH ARMY IN FRANCE, April 7, (delayed).—No finer chapter has been provided from the story of the British defense since the German offensive began than that furnished by the cavalry.

Never during the present war had horsemen been given the chance which they had in this more or less open warfare, and they made the most of it. They have been filling in gaps, strengthening the lines and covering the retirement of infantry. Their work has been brilliant and they thoroughly enjoyed every minute of it, despite the gruelling engagements.

The correspondent saw long lines of cavalry on the road yesterday. They were battle worn and plainly showed the marks of hard fighting. More than one trooper led a riderless horse. But the men's heads were up and their lances described defiant circles, while the horses cavorted as though they, too, were ready for more trouble.

In the first three days of the German drive, the cavalry fought mostly on foot and did valuable work. It was dismounted cavalry that held the Ollezy-Ham line March 22d, while the infantry withdrew. There was terrible fighting here. One party of dragoons was cut off at night, during which time they were out in the open battling for their lives. Finally they cut their way through the German lines at Jussy by main force.

The cavalry came into its own March 22d, for the horses were brought forward and the troopers began a series of spectacular feats.

When Noyon was first threatened cavalry was sent to hold the line of the Oise west of the town. The British infantry was forced to fall back March 26th and the cavalry was pulled back also, with the intention of occupying the ridge near the village of Forquericourt, in the vicinity of the Noyon. The Germans also were after this hill.

A race developed between the horsemen and the enemy infantry across the rolling ground. The Germans reached the northern part of the wood, but the cavalry arrived at the other side at about the same time and went rushing through the forest against the Germans. An intense battle at close quarters ensued and the cavalry was doing great execution when the order came for them to fall back in order to cover the retirement of the infantry, which had succumbed to pressure at other points. The troopers withdrew from the wood and brought up to the rear, pausing often to fight rear guard actions with the hotly pressing enemy.

The next big action was March 30th, when the Germans got into a wood northwest of Moreuil. Word came from the British command that the wood must be cleared out. The position was filled with enemy infantry who had brought forward great numbers of machine guns which were mounted in every available vantage point, even in trees.

The cavalry was called upon. They responded and came pounding up to the wood in a picturesque manner. Here a part of them dismounted and went in on foot. But Canadian horses tore on into the forest and hurled themselves on the enemy. As one trooper later put it:

"There was a hell of a fight."

Step by step the Germans gave way before the onslaught until the western part of the wood had been cleared between Moreuil and Demuin.

The Germans again attacked in force March 31st, and once more the British infantry, although fighting gallantly and stubbornly, was compelled to pull back because of the overwhelming weight of the numbers opposed to them. During the afternoon the cavalry again attacked here and drove most of the Germans back somewhat, but the enemy still clung to the high ground and kept sending forward supporting infantry.

WHY IS IT? ANOTHER ANSWER.

By ONE OF THEM.

THE question is asked "Why, among the late lieutenant class of the Regular Army, there should be a lack of initiative and willingness to assume responsibility in administrative and training routine?" I really believe this weakness is confined to these two elements rather than that it is general; I further believe it will not be the rule in the actual field work of the same officers where facts are the things to be lived up to and not the arbitrary will of instructors and commanders.

Is it not due to the lack of positive knowledge on the part of those from whom we received our instruction either in precept or by example and in turn is not their failure to make the most of the material placed in their hands due to the total absence of a *science* of training in our service?

It is said that as soon as the understanding or knowledge of any subject is so well analyzed and organized that it can be reduced to laws or principals, then that knowledge becomes a science.

This surely has not been done with our profession, although it is the oldest in the world's activities, and that it has not been done, while perhaps not the fault of our instructors, is certainly the cause of their failure and of our present *untrained* condition.

Themselves, taught by the *book*, the book and usually the very same book became the all and all of their instruction as they hand it down to the next generation. I have been red-inked at a school on a solution of a Grippenkurl problem for a departure from the approved solution. I was not informed that I had violated any principal but that a second lieutenant could not improve a solution of Grippenkurl therefore a departure was necessarily wrong. Thereafter, knowing what my instructor wanted, which was quite a game at these schools, I memorized the solutions and gave them verbatum being marked

crazy and mentally lazy at the time. Immediately I received excellent marks and saved myself the labor of original thought, for with youth memorizing is the easier of the two forms of mental activity.

Knowing their subject, yes, even their profession not by its underlying fundamentals but by the specific details of its various phases, our instructors not only did not encourage original interpretations by their students but often insisted upon a literal repetition of the words of a book or if the instructor attempted originality, very often would judge efficiency by and base their opinion of those under them upon the degree in which the student anticipated the arbitrary values fixed by themsleves.

The point so aptly brought out in "An Answer" in the January CAVALRY JOURNAL to the same question, that all our orders have been paragraph 3's; that we were seldom if ever given nor encouraged to ask, the situation or the plan of the commander as would have been the case if the form of a field order had been more generally used, is, I readily agree, a second cause of the regrettable condition.

Thus instead of mental development, the young officer received a training in mental gymnastics. Values were not consistent, not being measured by principals but for even temporary recognition had to meet the standards of the instructor of the moment.

Opinions, originality, interpretations, and reasons, though possibly fundamentally correct, had we or our instructors known how to test them, were not wanted or at least not encouraged if they differed from the statement of those in authority. All things had to be measured by the standard fixed by the fad of the moment or the individual and often arbitrary opinion of the instructor or commander.

Is it any wonder that the edge of our initiative and keenness to assume responsibility are somewhat blunted. I do not admit their absolute destruction, however, for perhaps impaired and rusty in action, where positive action is to be handled and where results will be material instead of theoretical, most of us will be found willing to use both of the qualities trusting that they may not have completely atrophied in their long disuse. It

was not our solutions or methods that we were afraid of merely the judgments on them were too uncertain to be profitable and then the game was not played that way. The sad thing about it all is the time for correct training and mental development that has been thrown away.

The cause of the condition is that while all other specialized knowledge has within the past century or so been raised by analysis and organization of its principals to the dignity of a science, Military Training, although its details has been increased a thousandfold, has never been studied by us with this in view. Its principals, although, recognized by many, have never been sufficiently simplified to be truly understood and never applied except at the wrong end: *i. e.*, to the acknowledged end of all training, the combat, but never made the basis for the training necessary to attain that end.

The correction I suggest is to change our form of training and to start by making a science of our profession basing its instruction upon its fundamentals instead of building the house upside down, as is now the case.

The method that will affect a cure is, I believe, contained in the Catechism of Uniform Tactical Training, for in my opinion there lies the seed that will produce what is needed, a new, perfect and upstanding Tree, a correctly and uniformly trained army.

It was in reading this book that my misapplied past was thrust upon me and I knew I never had known but believe I have seen a great light and that there is still hope.

TEAM WORK.

MUCH has been said and claimed for "team work," and undoubtedly it is the decisive element that makes for success in any action, Military or otherwise.

As a basic or fundamental law for the control of action, or with a strictly military application, of tactics, it may be sometimes placed in other than first place, but without it, the most

thorough observance of all the other laws or principals will be for naught

In all walks of life its importance is being preached constantly and in the service the term is heard on all sides. Corporals to generals not only preach it but state very positively that it is essential for success. Yet while all are demanding it of those under them, I have yet to hear team work defined or to see men instructed in its application.

Team work is as tangible and as material as close-order drill or any other of the many forms of human activity and men should be instructed in it to the same degree of perfection as in, we will say, the manual. It possesses this great superiority over all other forms of mental activity, it is applicable to and actually becomes the controlling influence of all other forms of detailed instruction.

Team work is the product of a correct mental attitude to be developed by concrete illustrations which will impress its effectiveness upon the one instructed. The instruction will not be satisfied by the development of the mere habit of looking for and giving the team work required by the special situation but must create a strongly felt moral obligation to do so.

As a concrete example of the merits of the system and the simplicity of its instruction, the following is submitted. We always have had instruction in advancing by alternate rushes target practice and the use of covering fire. Imagine the benefits to be derived and the idea of team work that would be emplanted by combining the three forms in the instruction of a pair of men. These men advancing by alternate rushes on a pair of targets under supervision that would note the observance by the individual of team work (covering fire), use of cover, etc. This could and should be made the basic illustration of the fundamentals of team work.

A mental training in the principle of team work is the only proper and consequently, thorough preparation of the soldier for the ready reception in correct form of any kind of detail instruction. Only men thus grounded can be said to be truly intelligently trained. They will be more self-reliant and of inestimable greater value to the machine as a whole than these

trained along mechanical, unthinking lines. In fact they will constitute the machine, which without this form of instruction is merely a collection of separate parts that will function together only as an accident.

Once the theory is grasped by the instructing personnel it is claimed that by the simple means of making a pair of men the basis of instruction instead of the individual soldier as is now the system, team work can be properly and fully developed in the army.

Like any other true principle, law or great idea, team work to be real must be lived, breathed and thought all the time. It should be the animating principle, the soul, of the army, by which every other thing that comes to it, is measured, digested and applied.

To accomplish this the idea must be placed in the daily life of every one from the moment of their entry into the service and distinctive terms appropriate to the different phases of the subject should become of daily usage. The failure of an individual in the performance of team work in a pair, should in addition to being a punishable offense, prompt the common censure and contempt that follows the "throwing down of a pal" in every day life.

Things, conditions and organization are of real value for the accomplishment of a given plan or purpose only in direct proportion to the team work employed in their use. Train the mind, therefore, by illustration and constant questioning to look for, find quickly and value correctly the team work in all proposed action.

Then, from the very beginning of training, the pair has been constantly impressed with the fact that there is always a "teammate" to be considered by one another, the idea of mutual dependence and desire and ability to help will be firmly emplanted and team work will at last be a live thing, to be depended upon in the fulfillment of the purpose of the army's existence.

Carry this "team mate" idea along with the development of the pair. Impress upon them when they enter the squad that the other squads of the platoon are their "team squads;" the other platoons of the company are their "team platoons"

and the other companies of the battalion their "team companies," and so on up to the limits of the army organization.

What fear would a company, battalion, regiment, brigade, or division, have for their flanks, we will say, if the team work idea were thoroughly instilled in the minds of everyone from private to general. A question on the subject would promptly bring forth the reply "Oh, our team company, battalion, etc., is on that flank."

There is nothing new in the above, merely a suggestion to change our form of applying team work; to stop preaching it downwards and to begin training it upwards.

There are few duties to which individuals or units are detailed that the "team work" or "team mate" idea cannot be applied. From kitchen police to a grand attack the details could and should be made with the idea constantly in mind and by the employment of some such terms as "principal" and "team mate or company," etc.

Furthermore a very specific specification under the 96th A. W. should become common throughout the service to impress individuals with the seriousness of failing to properly perform "team work" when detailed with a "team mate" to some specific duty.

An officer possessing a well balanced, analytical mind should be detailed as "team work" officer in each post, tactical division or larger units and at Washington for the purpose of studying all the forms of activity, administrative, routine in and especially the training of the organization to which attached, that the team work in each could be grasped, indicated to and observed by all.

IS IT NOT TREASON TO CRY DOWN THE HORSE?

(From the Rider and Driver.)

IF it be treasonable to do anything by word or deed that impairs our military efficiency with regard to, say, shipbuilding, motor manufacturing, railroad transportation and other vital activities, why is it not equally infamous to howl down the horse? It is an incontrovertible fact that even in this latest and most scientific of wars, the horse is more necessary than ever before and that the supply, rapidly diminishing, has been largely reduced as much by the effects of a malignant propoganda as by the economic exigencies that lessen demand. In late years, the cries of "down with the horse," "horseless age," "passing of the horse," and similar objurgation, have been heard throughout the land while, at the same time, the contending nations have been scouring the earth for horses, their requirements being estimated to be one horse for every three men in the service of arms. Competition in business affecting the horses' sphere is commendable and the "life of trade;" but, when such selfish considerations materialize into a form of persecution that is detrimental to the best interests of the national weal, it is time to call a halt. Instead of such drastic methods as have been used to displace the horse a spirit of "live and let live" should prevail, at least so far as the commercial phase of the situation is concerned; but when that kind of business promulgation reaches the point of endangering the lives of our heroes at the battle front the nobler impulses of patriotism must be rallied to inspire a reactionary sentiment. We are not merely expressing sentimental wishes, but stating facts as to the critical importance of the horse! It is irrefutable, for example, that three months before Germany parcipitated war, that country had purchased 350,000 horses from France alone, thus proving that the most militant power of the world, foreseeing, appreciated the inestimable advantage of the animal. This number was only a drop in the bucket, so to speak, compared to the thousands upon thousands of horses

bred in Germany and Austria-Hungary, and bred for many years, with an especial view to their value for campaign purposes. From England, too, Germany had purchased the best stallions for breeding available, without regard to price, paying as high as $125,000 for a single horse, the famous *Ard Patrick*, which, so far as we know, is still in the enemy stud. The losses of horses by the Central Allies have nevertheless, been stupendous and it is believed that they have not been replaced, by at least fifty per cent. In the final shocks of the fray this will tell against the enemy tremendously although, we believe, their cavalry have been maintained in the background at the fullest strength, awaiting mobile action when the trenches have been abandoned. In view of these circumstances and especially in response to the call from General Pershing for more horses and more horses, as they say of ships, and for more cavalry and more cavalry, the Secretary of War has instituted a tardy but strenuous drive to fulfil the obligations imposed and which in the better prepared countries were never overlooked nor undervauled. Whole volumes have been printed on the deeds of the horse, but it is not necessary to revert to them as they are known to every intelligent reader of history. As much, if not more, could also be written of the horse's incalculable services in the present struggle. It should suffice now for everybody who loves his fellow man, and who is sacrificing affection and fortune for the cause, to realize the stupendous significance of the horse in this titanic struggle for the freedom of the universe. It sounds hackneyed and inadequate to quote Richard III's desperate appeal, "A horse! A horse! My kingdom for a horse!" but never was there a time when the immortal phrase applied with such sonorous open diapason as at this moment when kingdoms tremble, to fall at the approach of whichever may be the mightier hosts' thunderous vibration of horses' hoofs. "Long live the horse; man's best friend in war as in times of peace!"

BREEDERS DISCUSS HORSES FOR THE UNITED STATES OF AMERICA.

(*From the Rider and Driver.*)

AT a dinner given by the Arabian Horse Club at the Vanderbilt Hotel recently, the subject of providing horses for the U. S. Army was discussed by Major Hazen Channing, Quartermaster Corps, U. S. A.; Colonel Albert Conste, head of the French Remount Commission; Colonel Edward Bray Hassel, of the British Remount Service, Captain Lorenzo Rotoundi, of the Italian army; W. R. Brown, of Berlin, N. H., President of the Arabian Horse Club; H. K. Bush-Brown, of Washington, Secretary of the Club; Warren Delano, T. W. Ames, of Wyoming; Leland D. Ives, of the Bureau of Animal Industry, in Washington; Major Fleury, of the French army; R. C. Craven, of the Red Star Animal Relief and Gurney C. Gue, Secretary of the American Hackney Horse Society.

The concensus of opinion expressed by the foreign officers and breeders present was as follows:

The artillery horse can be obtained in this country in abundance and quality for the duration of the war.

The cavalry horse can be obtained in abundance for an indefinite time, but the quality of this horse has been and is poor.

The number of desirable registerable light horses suitable to produce a superior quality of cavalry horse amount to but a small percentage of all light horses in this country, and their number is diminishing rather than increasing, due to the present low prices, the result of competition by motor vehicles.

It is greatly to be desired that the production of well bred registerable animals be stimulated, and that they be distributed more generally in order to improve the quality.

There is at present no comprehensive plan pursued by the Government to do this or to assist breeders so to do.

The War Department should have charge of this matter rather than the Agricultural Department, as the needs of these

departments are diverse and the War Department desires a special type of animal.

The power resting in the Executive is sufficient to transfer this activity to the War Department as a war measure.

Conformity to established European practice which has been tested would no doubt be the most effective. Foreign governments, with the exception of England, maintain breeding stations in considerable numbers where selected stallions are bred to desirable mares to obtain and perpetuate suitable types. The past methods of carrying on government remount stations in this country do not produce satisfactory results.

There are some of the most favorable regions in the world for quality at a minimum expense, particularly in the West, and some of this land is already owned by the government.

The breeders of the country should present their views on this question as a united body in order to obtain a hearing. The breeders should agree to co-operate in assisting the government to meet the need for better cavalry horses in the future as a means of permanent national defense.

W. R. Brown.

THE EFFICIENCY OF CAVALRY.

(*From the Dayton Journal.*)

AMERICAN cavalrymen have demonstrated in Mexico what European cavalry have demonstrated in many parts of that continent, that, notwithstanding the aeroplane development, and the development of heavy artillery, cavalry continues a necessary and efficient arm of the military service.

Our splendid riders in Mexico have performed some exploits that will go down as a part of the folklore of the country; and this in face of the admitted fact that cavalry has been much neglected in recent years, because of the general belief that it had been supserseded by other and more important agencies.

To think of armies without cavalry is to think of a something lacking the dramatic element. What would Waterloo be to the modern reader without the charge of Murat's plumed horsemen and that of the Scots Grays? What would the battles of our own Civil War read like if we left out Stuart and Joe Wheeler and Sheridan and Custer?

So our little dash into Mexico will be remembered as a cavalry expedition particularly. Down there the infantryman and the motors were at a disadvantage compared with the cavarly. It had to be a swift chase. There were so many natural enemies—the mesquite, the desert sands, the lack of water, the heat, the parasites, which bit and stung—all these in addition to the bandit with his guns and other weapons.

The expedition could not have been accomplished without the aid of cavalry.

BRITISH SCHOOLS FOR HORSESHOERS.

DURING the present great war, Great Britian maintains three great schools for horseshoers, classified as shoeing-smiths and cold-shoers. That at the Aldershot Command provides for the instruction of 400 men; that of the Southern Command at Romsey, 400 men; and that of the Eastern Command School, 400 men. The Royal Engineers and the Army Service Corps, continue to train their own horseshoers. Previous to the war, many cavalry regiments trained a large number of their own horseshoers in regimental schools; while others arranged for training at civilian farrieries.

The course of instruction at the three great schools, is usually six weeks for cold-shoers, and three months for shoeing-smiths, who have previously qualified as cold-shoers.

A gratuity of ten shillings is paid a non-commissioned officer who trains a soldier as an efficient shoeing-smith, provided the non-commissioned officer is not of the Command School of Farriery; and a gratuity of five shillings, if the soldier is efficiently trained as a cold-shoer.

Details of Administration.*

The author states in his Preface that "The work is a compendium of information gathered from many sources, both at home and abroad," and after a careful persual of the book the reviewer agrees with this statement and considers it the most valuable compendium of information concerning military medical administration that has come to his attention.

As wou'd be expected in a book containing much material based upon War Department orders and regulations, which are constantly changing, some of the orders discussed, and the recommendations given, are already obsolete, but this is unavoidable unless a work of this character is constantly kept up-to-date by frequent revisions and editions. However, most of the information contained in the book will always be found essential and useful. It is to be regretted that Special Regulation No. 28, dealing with Sanitary Regulations and Control of Communicable Diseases, could not have been printed in the book, instead of G. O. No. 45, War Department, which it has superceded, but which is printed in full. As Special Regulations No. 28 were not issued to the army until late in 1917 it is

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*"DETAILS OF MILITARY MEDICAL ADMINISTRATION." By Joseph H. Ford, B. S., A. M., M. D., Colonel Medical Corps, U. S. Army. Published with the approval of the Surgeon General U. S. Army. Pages 742 and 30 illustrations. P. Blakiston's, Sons & Co. Philadelphia. 1918. Price $5.00.

probable that the book was in press before its appearance, but, if not, its inclusion would have added greatly to the value of the book.

The work is divided into chapters dealing with the following subjects: The General Principles of Military Medical Administration; The Regimental Surgeon; The Amublance Company; The Field Hospital; The Camp Hospital; Sanitary Squads and Committees; The Division Surgeon; The Evacuation of the Sick and Wounded; Hospital Trains; Hospital Ships; The Base Hospital; The Sanitary Service of Camps; The Sanitary Service of Posts; The Department Surgeons Office; Public Health Service; Medical Supply Depots; The Examination of Recruits; Voluntary Aid; and Malingering. In each chapter the medical officer's duties are considered in detail, the various blank forms used discussed thoroughly, and each chapter constitutes a complete guide to the officer for the administrative duties of the subject considered. Although much of the information given may be found in the various service manuals and Army Regulations, the collection of all the data under a single cover is of immense advantage to the younger medical officer, and for this reason, the book is recommended to every medical officer now entering the service, either in the Regular Army Medical Corps, the Medical Reserve Corps, the National Guard, or the National Army.

Undoubtedly, the Appendix will prove the most generally useful portion of the book. This comprises nearly 200 pages and contains full instructions regarding the preparation of the more important army papers and a *fac-simile* copy, properly filled in, of nearly every blank form used by the medical officer in the administrative portion of his duties. With this Appendix to guide him, it is difficult to understand how even the most inexperienced officer could fail to properly prepare the official papers required of him.

The reviewer can cordially recommend this work to the attention of all medical officers, believing that its widely extended use will greatly increase the efficiency of the Medical Department at a time when so many inexperienced officers are entering the service, and that it will prove to be one of the most

valuable books that such an officer can purchase. It is well printed, upon good paper, and fully illustrated.

CHAS. F. CRAIG,
Lieut. Col. Med. Corps, U. S. A.

Tactics and Technique of River Crossings.*

River crossings and the defense of rivers in warfare have presented in the past, and will doubtless continue to present, serious and often very complex and difficult problems to the military commander. Success or failure of a campaign may be largely and at times entirely, dependent upon a successful crossing or a successful defense of a river. Military history and accounts of past campaigns supply numerous instances in support of this statement.

In "Tactics and Technique of River Corssings," by Colonel Merten, Chief of Section in the Engineer Committee, German Army, the military student has offered him a timely, up-to-date and thoroughly comprehensive treatise on this subject.

Though written by an Engineer Officer, it is not in any sense a technical book, but is intended for all officers, line and staff. The author makes a strong plea for thorough co-operation between the pioneers, on whom the technical part of bridge construction devolves, and all the other arms; between the pioneer officer, who has charge of the construction of the means for crossing and the staff officer who determines the sight for crossing. The importance of a thorough understanding and appreciation of the powers as well as of the limitations of each arm and brach of the service by all the others is emphasized as essential to the production of successful teamwork.

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*"TACTICS AND TECHNIQUE OF RIVER CTOSSINGS." By Colonel Merten, Chief of Section in the Engineering Committee, German Army. Translated by Major Walter Krueger, Assistant Chief of Staff, 84th Division, N. A. 1918. D. Van Nostrand Company, 25 Park Place, New York, N. Y. Price $2.50, net.

In river crossings it is of especial importance that the tactical and technical requirements of a situation confronting a commander to be co-ordinated, for, to cite the author "Tactical measures that are not consonant with technical requirements and possibilities may be just as disastrous as technical plans that do not meet tactical demands."

The subject is fully treated and the matter is well arranged and presented.

In the first part of the book, following some pertinent general statements on the subject under treatment, which take 8 of the 253 pages of the book, the author discusses "River Crossings." in four chapters—I. Bridge construction outside of the effective zone of strong hostile forces (pp. 8-19); II. Accelerated crossings in the immediate presence of the enemy (pp. 20-29); III. Forced crossings (pp. 30-35); IV. Surprise crossings (pp. 37-99).

The second part of the book treats of "Defense Against a Hostile Crossing." Following a general consideration of the "Kinds of river defense" (pp. 101-106), he discusses this subject in three chapters—I. Postion of the main forces at the river (pp. 106-123, Cordon System); II. Defense of a river line with small detachments posted on the bank (pp. 124-140); III. Rear guard actions on river lines (pp. 143-148).

Examples in illustration of the principles stated are cited from the Napoleonic Wars, the Schleswig-Holstein War, 1864, the Franco-German War 1870-71, the Russo-Turkish War 1877-78, and the Russo-Japanese War 1904-06, and also from large scale maneuvers.

Fo lowing this and in elucidation of the principles enumerated in the chapters on "River Crossings" and "Defense Against a Hostile Crossing," the author presents two excellent tactical-techincal studies. These are based on General von Falkenhausen's study of the operations of the gigantic armies of the future (published under the title of "Flankenbewegung und Massenheer" 1911). While the operations described by von Falkenhausen, and the excellent conceptions upon which they are based, are reproduced in general terms only, Colonel Merten has followed the study closely, except as to unimportant details. The author of "Flankenbewegung und Massenheer"

draws his inspiration from the battle of Leuthen, "where his genius for generalship enabled Frederick the Great to lead his numerically inferior army to victory by vigorously striking the far superior enemy in flank and he believes that he can answer the query as to whether such an operation is possible for the massed armies of today, in the affirmative. General Falkenhausen contends that "if movements are skillfully initiated and carried out," it should be possible, "to lead the inferior force against a flank of an extensive hostile line and to roll it up before the bulk of the hostile forces could be put in march for the purpose of turning the scales." Both studies are highly instructive.

Appendix I treats very fully of "Expedients for Quickly Crossing Streams," by means of "Fording and Swimming," "Rafts," and "Hasty Bridges."

Appendix II gives information on "Bridge Trains of Various Armies and Their Capacity."

The volume is well illustrated, there being 105 figures and 4 maps.

It is particularly fortunate that so good and important a military treatise as this has found so able and accomplished a translator as Major Walter Krueger, Assistant Chief of Staff, 84th Division, National Army, who is already favorably known to army officers by his excellent translations of Volumes I and II of Balck's Tractics.

CHARLES W. MILLER,
Colonel of Infantry.

Unpopular History.*

The author has set forth in this book in a semi-humorous and wholly interesting way a number of the most important and least widely known details of our national history.

The events to which he calls attention are those which point most strongly to the danger of failing to prepare for war before that war's occurence and to the positively sure dis-

*"THE UNPOPULAR HISTORY OF THE UNITED STATES BY UNCLE SAM HIMSELF." By Harris Dickson. F. A. Stokes Company. New York, N. Y. Price 75 cents.

appointment that always follows dependence upon untrained troops when war at last arrives.

His statements are all based upon facts taken from the records as quoted by General Upton in his well known book—"The Military Policy of the United States," and it is to be hoped Mr. Dickson's book will have a wide circulation, as it cannot but arouse the interest of all who read it, in General Upton's work.

Mr. Dickson, like the author whom he so frequently quotes minces no words, conceals no unpleasant facts, but speaks straight from the point.

Solution of Problems.*

The author has not concerned himself so much with the discussion of concrete problems, as with the attempt to show the logical series of mental processes through which an officer's mind must work from the conditions of *any* problem, to his solution thereof.

Its value in establishing in the mind of one who studies it, a method of estimating the situation presented to him, with the certainty of overlooking no important point, should be great.

It has an especial value for young officers in this time when it is the fundamentals of the art of war, which it is so necessary that they grasp, for certainly clear and logically ordered thought is one of the greatest of fundamentals in the art of war as in any other art or science.

*"THE SOLUTION OF TACTICAL PROBLEMS." By J. Layland Needham, Lieutenant Colonel British Army. E. P. Dutton & Co. New York, N. Y. Price $2.00.

Field Sanitation.* Colonel Ford has compiled in a small space a great deal of the information regarding the sanitary and hygenic expedients that have been developed by the experience of our own troops on the Border and in Mexico, and by that of the armies abroad in the present war.

The arrangement of the subject matter is such that the book is extremely easy to read and the book is profusely illustrated with diagrams, photographs, etc., and in many cases, the author gives bills of material necessary for constructing the apparatus for, disposing of waste, bathing facilities, and the housing of men.

All of this information so invaluable to officers now that such a great number of our officers are unfamiliar with the methods of caring for troops, Colonel Ford has put forth in this extremely practical and interesting hand-book.

Ballads of the Regiment.† There has appeared in our midst an unique and entertaining book of verse, "Ballads of the Regiments," by Major Gerald E. Griffen. It depicts with vivid understanding, much humor and pathos all phases of the service, of the old army and the new. As Kipling saw the "Tommy" so does Major Griffen understand the "Sammy" and well might he be called, our Kipling.

*"FIELD SANITATION AND HYGIENE." By Colonel Joseph H. Ford, M. C., U. S. Army. P. Blakiston, Son & Co. Philadelphia, Pa. Price $1.25.

†"BALLADS OF THE REGIMENT." By Major Gerald E. Griffin, U. S. A. George U. Harvey Publishing Co. 109 Lafayette Street, New York City. Price $............

Leadership and Military Training *

When every fifth man in our military forces must be a leader, is it not strange there has never been a textbook on the subject? That there is one now, written by a man who has been ardently engaged in teaching its fundamental principles by precept and example in our largest training camps for officers, is good news for the men who wish to serve their country to the utmost of their ability, and for the country that must depend upon their work for its honor and safety.

This is the only military book that even pretends to tell you how to be a good officer or non-com.; how to handle men so that they will accept you as their leader; how to arouse in your command the enthusiasm, the persistency that will give the discipline and morale that are the one aim of military training. Even experienced regular army officers, who have never analyzed the psychology of their profession, have said: "It is the most helpful book I have ever read. I am a different officer since I studied it."

Designed for beginners and for civilians who wish to know what military service really is, it does not aim to take the place of Service Manuals, but rather to explain the spirit of the service, the inner meaning that renders all else of practical avail.

Particularly good are those parts on "Rules for Conduct," "Rules for Courtesy," "Rules for Health" and "Rules for Battle."

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*"LEADERSHIP AND MILITARY TRAINING." By Lieut. Colonel Lincoln C. Andrews, U. S. A., now Brigadier General N. A. Author of "*Basic Course for Cavalry*," and "*Fundamentals of Military Service*." J. B. Lippincot Co., Philadelphia and London. 1918. Price in limp leather $2.00, net; in limp cloth $1.00, net.

BOOK NOTICES.

"Army French. An introduction to Spoken French for Men in Military Service." By Ernest H. Wilkins and Algernon Coleman. The proceeds of the sales of this book will be devoted to work of the Y. M. C. A. and other army work. The University of Chicago Press, Chicago, Ill. An excellent work of 186 pages—4 in. by 6 in.—made for military men. Price 44 cents, postpaid.

"Tactical Walks." By Lt. Col. William H. Waldron, U. S. Infantry. Published by George U. Harvey Publishing Co., Inc. 109 Lafayette Street, New York City. Price $1.50.

"Field Artilleryman's Guide." Three-inch gun, 4.7 and 6-inch Howitzers. Prepared by the Officers of the 108th (2d Pa.) Field Artillery. Second Revised Edition. P. Blakiston's Son & Co. 1012 Walnut Street, Philadelphia. Price $1.75, net.

"Simplest Spoken French." By W. F. Giese and Barry Cerf, of the French Department University of Wisconsin. 1918. Henry Holt & Company. New York City. Price 65 cents, net.

"Military Instructor's Manual." By Captain James P. Cole, 59th Infantry, and Major Oliver Schoonmaker, 76th Division. Instructor and Assistant Instructor, respectively 3d Battalion, 17th Provisional Training Regiment, Plattsburg, N. Y. Published by Edwin N. Appleton, 1 Broadway, New York City. Price $2.00.

"TRAVELING UNDER ORDERS." A Guide-Book for Troops en Route to France." By Major William E. Dunn, Field Artillery, National Army. Harper & Brothers Publishers. New York and London.

"INFANTRY TRAINING." Notes and Suggestions. Subject Outlines. Training Schedules. By Dale F. McDonald, Captain of Infantry, United States Army. George Banta Publishing Company. Menasha, Wisconsin.

"RAPID TRAINING OF RECRUITS. A Practical Scheme." By M. V. Campbell, late Lieutenant U. S. Marines. Frederick A. Stokes, New York. Price $1.00.

"THE AMERICAN SOLDIER IN FRANCE." A military guide-book to the French language, army and nation. By George Nestler Tricoche, late artillery officer French Army. Author of "Stumbling Blocks of French," "Our Army in a Nutshell," etc. Second Edition. Park Place, Morristown, N. J. Price 50 cents.

"OUR ARMY IN A NUTSHELL." The Civilians' Military Handbook, including the new Regimental and Divisional Organization and all the changes which it is permissible to publish. By George Nestler Tricoche. Published by George U. Harvey Publishing Company, Inc. 109 Lafayette Street, New York City. Price 60 cents.

"ARMY AND NAVY UNIFORMS AND INSIGNIA." How to know Rank, Corps and Service in the Military and Naval Forces of the United States and Foreign Countries. By Colonel Dion Williams, United States Marine Corps. With eight illustrations in color and one hundred and seventeen in black and white. Frederick A. Stokes Company. New York City. 302 pages. Price $1.50, net.

"MILITARY AND NAVAL RECOGNITION BOOK." A Handbook on the Organization, Insignia of Rank and Customs of the Service of the World's Important Armies and Navies. Lieut. J. W. Bunkley, U. S. Navy. With 51 full-page plates—18 in colors. D. Van Nostrand Company. 25 Park Place. 1917. Price $1.00, postpaid.

"THE SOLDIERS' ENGLISH AND ITALIAN CONVERSATION BOOK." Containing hundreds of useful sentences and words, enabling the American soldier to converse with the Italian allies, with the correct pronunciation of each word. Translated and adapted by Ida Dickinson. From W. M. Gallichan's Soldiers English-French Conversation Book. J. B. Lippincott Company. Philadelphia and London. 1918.

"HAND-TO-HAND FIGHTING. A System of Personal Defense for the Soldier." By A. E. Marriott, Camp Physical Director Army Y. M. C. A., Camp Sevier, S. C. The MacMillan Company, New York. 1918. Price $1.00.

"SMALL ARMS IINSTRUCTOR'S MANUAL. An Intensive Course." Complied by the Small Arms Instruction Corps, Reginald H. Sayre, Captain Res. N. G., N. Y. Stowe Phelps, Ex-Captain N. G., N. Y. and Gerard P. Herrick, Ex-Ord. Sergt. N. G., N. Y., with an Introduction by Captain C. C. Griffith, C. A. C., U. S. A. E. P. Dutton & Company, New York. 1918. Price $0.60.

Editor's Table

JOHN C. KETCHESON.

On February 1, 1918, there died in the city of Leavenworth as firm a friend as the CAVALRY JOURNAL ever had. He was a printer and the head of the J. C. Ketcheson Printing Company, that had printed the CAVALRY JOURNAL for almost thirty-three years. He always took a lively interest in the U. S. Cavalry Association and its JOURNAL, and for a period of two years he did not receive a cent of pay for printing the JOURNAL, when it was hard up, financially, after the Spanish War. Of course he was ultimately paid for this, but such was his love for the Association that he carried on the JOURNAL when things looked very dark for it.

He was a veteran of the Civil War, having enlisted as a Private in 1861 and he served in all the grades to that of Sergeant Major which rank he held when he was mustered out on July 17, 1865. He belonged to the noted Eighth Illinois Cavalry, which regiment furnished so many officers to the Regular Army. He was promoted Sergeant Major to succeed Earl D. Thomas who was discharged to enable him to accept the appointment as a Cadet at the U. S. Military Academy, and who afterwards became Brigadier General in the Army. Incidentally the present Editor was in the same regiment and succeeded General Thomas a Cadet at West Point.

He was a modest, unassuming gentleman who had made a host of friends in the city of Leavenworth and State of Kansas, where he lived over fifty years. He was a particularly dear friend of the Present Editor of the JOURNAL.

JOHN C. KETCHESON.

BORN MARCH 4, 1838 DIED FEBRUARY 1, 1918

A PLAN FOR FURNISHING REMOUNTS FOR THE ARMY.

The following plan for obtaining remounts for the army is being tried out by the Agricultural Department.

In order to encourage the production of horses suitable for cavalry and light artillery uses, the United States Department of Agriculture, in co-operating with the War Department, have placed in selected localities good, sound stallions of proper type and offered more owners special inducements to make use of them. This plan, made possible by a provision of Congress in 1913, grew out of the difficulty the Government has had in securing a sufficient number of Army remounts. Light-horse stock has deteriorated, due to the curtailed demand as a result of the growing popularity of motor vehicles, and farmers had turned their attention to improving the heavier draft horse.

The plan consists primarily in placing stallions of merit, registered in the proper stud books and belonging to the Thoroughbred, American Saddle, Standardbred, and Morgan breeds in suitable localities in Vermont, New Hampshire, Virginia, West Virginia, Kentucky and Tennessee. Mare owners may breed to these stallions on the following terms: The owner of the mare agrees in writing at the time of breeding to give the Government an option on the resulting colt as a three-year old at a stated price, which so far has been $150. No service fee is charged unless the owner of the colt wishes to be released from the option, in which case it is $25.

This means that practically no money is invested in service fees. If the colt is purchased by the Government no fee is charged, nor is there any charge if the colt if offered to the Government and purchase refused because it does not qualify. The breeder does not have to pay a service fee on a colt which dies, which is deformed, or which is seriously injured. Only sound mares that approach either a cavalry or a light artillery type are used. Records taken June 30, 1917, show that 3,089

colts have been produced since this plan was put in operation at the beginning of the breeding season in 1913.

The brood mares are usually farm-work animals, which generally pay for their feed by doing farm work, and the colts are brought up to birth without cost. High-class stallions are available for the mare owners' use. Community breeding, which is of inestimable value, is encouraged. The object of the remount-breeding work is to select for and breed sound horses with quality, stamina, and endurance which conform to the army's needs, and such animals will also be useful for general farm work, especially in mountainous sections.

INSTRUCTION AND TRAINING OF CAVALRY.

PREPARED IN THE WAR PLANS DIVISION GENERAL STAFF, U. S. ARMY.

1. *Object of Training.*—To render perfect service on the field of battle is the final object for which the Army is created and maintained.

Readiness for active service, and especially for the particular kinds of active service in which the troops are most likely to be engaged, is the objective to be kept in view in all training and preparation. The activities of all concerned will consequently be directed to the attainment of that end.

To be prepared for such service the troops must not only be thoroughly instructed, but also must have a high morale, based on consciousness of ability to meet successfully all the demands of war. The value of an organization is to be judged by its all-around ability to take the field and to meet successfully every phase of war service.

2. *Responsibility for Training.*—The responsibility for the training of any command rests solely upon the commanding officer.

Under the direction of the commanding officer, responsibility for the training of all units devolves upon the commanders of those units.

3. *Patriotism* is of the first importance. An absolute and unqualified devotion to the welfare and success of our country is indispensable.

4. *Discipline* distinguishes thoroughly trained and instructed troops from an irresponsible, unwieldy, and disorderly aggregation of men. Its essential characteristics are respect for and implicit obedience to superior authority. Its vital importance must be thoroughly impressed upon all in the military service. Cheerful, earnest and loyal obedience must be promptly paid by all subordinates to lawful orders of superiors.

Modern war requires of all arms the highest degree of discipline obtainable. The failure of men to carry out their orders implicitly in an attack results in unnecessarily heavy losses, if not in absolute failure. Experience proves that only thoroughly disciplined troops can carry out a modern attack where every step must be taken in accordance with a carefully prepared schedule.

The first great step in fitting troops for service is to inculcate the spirit of discipline and this will require the following:

(*a*) Every officer must set a proper example for those below him in rank by promptly, cheerfully and loyally obeying orders and regulations, by a careful and exact performance of every duty, and by exacting the same of all subordinates.

(*b*) Strict attention to dress and military courtesies. If men are allowed to be untidy in dress and personal appearance, slipshod and careless about rendering courtesies, the military spirit is lost and the command remains undisciplined.

(*c*) Precision and snap in drill must be insisted upon. All movements are to be executed exactly as prescribed.

The precise movements of close-order drill are not for the purpose of teaching men how to get about on the battlefield. They will hardly be used there at all. One of the principal objects is to train the minds and bodies of soldiers to habits of precise, unhesitating obedience to the will of the leader, so that in the stress of battle they will obey without conscious

effort, mechanically, automatically, as the most natural line of action.

(*d*) Leaders must possess accurate knowledge of their work. Commands must be given correctly and there must be no hesitation. Leaders are required to treat all subordinates with courtesy, to correct reasonable mistakes without harshness, to give clear and reasonable explanations, and to show men how to do that which is desired. When men fail through persistent carelessness, inattention or willfulness, then recourse must be had to measures as drastic as are permitted.

(*e*) Esprit de corps, pride in the organization, is to be cultivated in all subdivisions even to the smallest. Competitive contests between smaller units is of great advantage.

5. *General Principles of Training.*—The efficiency of the squad depends on the thoroughness of the training of individual members of this unit.

The efficiency of every command depends on the efficiency of the units or teams composing it. As each team in a large command must be under the direct control of its immediate chief, it is evident that such chief should have all possible charge of the instruction of his team. From such a system there should result not only suitable instruction of the team, but also comradeship among the individual members, pride in the team as a unit, and that confidence and habit of command on the part of the leader, so necessary to efficient leadership.

Higher commanders supervise the instruction of the units of their commands. Unit commanders will be given great latitude in the choice of ways and means for training their units and will be held to corresponding responsibility for results attained. Higher commanders interpose to change the ways and means employed by their subordinate commanders only when convinced, after careful observation, that the necessity for interposition is such as to justify impairment of the initiative ordinarily left to subordinates.

Self-respect, self-reliance and resourcefulness are qualities that should be cultivated to the fullest extent.

The aggressive spirit must be inculcated and the soldier impressed with the idea that he is superior to the enemy.

The best instruction is that which is practical and which is taught through personal contact between the instructor and those under instruction.

The officer must know the duties of the men under his command in addition to his own specific duties.

Officers and non-commissioned officers of each grade should be competent to take up the duties of the next higher grade. Military efficiency cannot be attained without competent and instructed officers and non-commissioned officers.

All officers should be present at drills. Every mistake must be corrected and the men kept to their work.

Drill should be made interesting by varying the exercises as much as possible. This is necessary in order not to exhaust the soldier's attention by straining it too long on one subject. Comments should be made by the leaders throughout the drill, directed toward those elements whose performance is unusually good or bad. Full advantage should be taken of the beneficial effect of praise and commendation publicly extended to deserving individuals or units.

During the periods allotted to instruction of subordinate units, terrain exercises, tactical or staff walks or rides, war games and map problems furnish the special means whereby all higher commanders may be preparing themselves and their staffs for their appropriate duties.

It is important that our troops in the United States be ready for active service abroad as soon as possible. Untrained troops sent abroad have to be trained there before they can be used in battle. Untrained men are less than useless in action. As much of their training as is practicable should be done before sailing. This is important, but proficiency is the most important factor in training.

While this war has called into use new weapons and new methods, it has not obviated the use and necessity of the old. Most of the new methods, can be quickly taught to soldiers otherwise trained, and if training cannot be completed in the United States, the instruction which pertains to new weapons and new methods is the part which will be left to be given abroad.

6. *Schools for Officers and Non-commissioned Officers.*—To be effective in time of war, military training must be uniform. To insure uniform instruction throughout the command, officers' schools shall be conducted under the supervision of the regimental commander, and non-commissioned officers' schools shall be conducted by the troop commanders under the supervision of the squadron commander.

In these schools the work must be first on the Cavalry Drill Regulations. Hours of meeting of the different classes shall be so arranged as to permit officers and non-commissioned officers to be present at drills and other practical instruction. The tactical instruction of all officers will be under the direct personal supervision of the commanding officer. The course will be taken up at once and continued throughout the year.

7. *Bases of Training.*—Study, drill and practical application form the bases of training. By study, knowledge of principles and methods is acquired; by drill, skill in the mechanism of methods and in the performance of habitual duties is gained. It is by practical application that officers and men learn to adapt to actual cases the knowledge and skill they have acquired. Facility in so doing is of the utmost importance, since on service a great variety of practical problems present themselves, each of which must be solved on the basis of its own particular requirements Hence, as soon as proficiency in elementary methods is attained, the applicatory system will be employed, commencing with simple problems and gradually widening the scope so as to introduce the greatest possible variety of conditions. To this end all tactical exercises, whether theoretical or practical, whether with or without troops, will be based upon an assumed situation. In all exercises in the field a concrete case will be stated, calling for the actual employment of the organization concerned, and the organization is then employed to meet the requirements of this case. The strength and character of the opposition to be expected, the nature of the terrain, the obstacles to be overcome, being known or developed as the solution proceeds, the opportunity is afforded not only of applying appropriate general principles and tactical methods, but also of putting

to practical use many minor phases of instruction which had previously been the subject of drill-ground training. Thus, the service of security and information, signaling, field fortification, pioneer work, the passage of obstacles, may all be incidents of the operation involved, and being natural incidents the purpose of the previous drill and instruction becomes apparent, as well as the difficulties liable to arise under the varied conditions of service. The more nearly the conditions of service are simulated and the greater the variety of the incidents introduced, the more instructive will these exercises be.

Such exercises may be conducted at first as map problems or terrain exercises for the training of officers and selected enlisted men.

8. *Drill and Practical Instructions Preparatory to Field Training* embraces especially: Drill of the troop and all of the units thereof, mounted and dismounted; the preliminary training for fire action and firing exercises on a represented or actual terrain with targets represented to scale or actually designated, thus giving opportunity to train the personnel both in the mechanism of fire and in appropriate methods of directing, controlling, and adjusting fire; the rudiments of the service of security and information, including the preparation and transmission of orders and messages; map making and map reading for officers, non-commissioned officers, and selected privates; exercises in leaving the camp with a part or all of the command equipped for prolonged service in the field; swordsmanship, mounted and dismounted; visual signaling; gymnastics, athletics, and swimming, including swimming with arms and equipment under proper precautions as to safety; equitation, horse training, and packing; tent pitching; guard duty and ceremonies; first aid and the hygienic care of the person; care of equipment of all descriptions.

9. *Field Training* embraces especially: Range practice; field firing exercises with service ammunition; field fortifications, including the reconnaissance and selection of positions, and the actual construction of appropriate intrenchments; the service of security and information (Field Service Regula-

tions); marches and convoys; maintenance of communication between the elements of a command; the care of men and animals, including the preparation and service of food, shelter and the service of sanitation and supply; the passage of obstacles; night operations; map making; swimming of horses and men, to include swimming with arms and equipment under proper precautions as to safety; packing and exercises in the solution of transportation problems; the drafting of orders and messages as incidents of the above exercises; combat and field exercises, first of a simple nature but gradually becoming more and more comprehensive.

Combat and field exercises are intended for instruction in the proper handling of troops in campaign and on the battlefield. Only such mechanical precision of movement is required as is necessary to keep the troops from getting out of hand.

10. *Minor Tactics.*—Experience on the western front has proven the great importance of minor tactics which must receive very careful attention. While battles cover long fronts and are carried on by large bodies, locally there constantly arise minor combats, "strong points" must be captured or flanks must be covered by small units. Outpost work and patrolling are incessant. It must be expected that some day the trench line will be broken and then advance and rear guard work will be of great importance.

To teach minor tactics properly requires much careful work.

11. *Tactical Exercises.*—The problems for tactical exercises will be prepared in writing. Tactical orders will be given for all dispositions and movements required in the execution of such exercises.

Each tactical exercise held will be preceded by such explanatory instruction as may be considered necessary and will be followed by a critique to be conducted, if practicable on the ground on which the exercise took place.

The necessary umpires will be designated by the commader of the next higher unit; the squadron commander for troop problems, the regimental commander for squadron problems, etc.

The procedure at the critique will be substantially as follows:

(*a*) The commander of the unit concerned will state his problem, and briefly discuss the manner in which he executed it.

(*b*) Subordinate commanders will briefly discuss the part of their work pertinent to the problem.

(*c*) The junior umpire will make his criticism for the side concerned.

(*d*) This procedure will be repeated for the opposing forces if the problem is two-sided.

(*e*) The senior umpire wil then conduct his critique, pointing out only important errors and the lessons to be learned therefrom.

(*f*) The commander of the next higher unit concerned will then sum up. Throughout the procedure he will prevent acrimonious debate and lengthy discussion of irrelevant matters.

Suggested Tactical Exercises. For a troop. Advance guard (whole unit acting as advance guard); and attack and assault dismounted; defense of horses of regiment (represented) by guard over them; battle and combat reconnaissance; a march over an unfamiliar route, individuals questioned as to physical features observed along the route; patrolling, situations at various points to be communicated to patrols; attack of a convoy, troop wagons at appropraite distances to be used to represent the convoy; messenger service, troop forming relay posts in hostile territory for at least ten miles from main body; patrolling at night, keeping touch with enemy's outposts during night, one platoon under an officer to provide for the security of the enemy; an advance to a surprise attack, a squad under an officer to provide for the security of the enemy; patrolling, movement across country from point to point by means of compass bearings taken from map; trailing an enemy's patrol across country, one squad to represent the enemy's patrol.

For a squadron. Defense of a convoy on the march, troop wagons at appropriate distances to be used to represent the convoy; organization of a defensive position, together with the actual construction of trenches for one troop; to go into

camp and distribute contents of baggage wagons, construct latrines, break camp and repack wagons; outposts; an attack and assault dismounted; retreat; bivouac for night on battlefield; a defensive screen with assembly to meet and attack; a recontre engagement against cavalry; an attack against artillery in position; a rear guard action; destruction of bridge.

For a regiment. An advance and halt, pitch camp, individual cooking; reinforcing an outpost; a withdrawal from dismounted action; advance at night to a position in readiness for assault; a flank march; passage of a river crossing defended by infantry; an attack and assault dismounted; a pursuit; march of dispersed squadrons to a point of concentration; a mounted attack.

12. *Instruction, Mounted*, will include horsemanship; drill, individual instruction; drill, collective instruction of squad, platoon, troop, squadron and regiment; use of rifle and pistol, mounted; saber manual and exercises; marches and march discipline; service of security and information; equitation; horse training; cross country riding, both in line and in column, over country approximating shell hole terrain, jumping low hurdles and trenches; inspections, equipped for the field; exercises in leaving camp, equipped for the field; tactical exercises.

13. *Lectures and Instructions, Dismounted.*—Will include: Discipline and courtesy; articles of war and courts-matrial; customs of the service; guard duty; nomenclature, fitting, and use of horse and personal equipment; packing field and surplus kits; care of the horse, including, nomenclature, and general rules for watering, feeding, grooming, and shoeing; detection of minor ailments in animals and treatment; personal hygiene, camp sanitation and first aid; receiving and delivering verbal messages; tent pitching, pyramidal, wall, and shelter tents; signaling; individual cooking; packing (two men per platoon); gas defense; field service regulations; field fortications.

14. *Small Arms Firing.*—The cavalryman must be able to shoot with rifle and pistol and hit his target. His practice must be such as to make proper aiming and trigger squeeze a fixed habit, for only when such is the case will he do it properly under stress of battle. The utmost attention must

be given to this work by all. The higher commanders must see that their subordinates do this work properly. As soon as the men are advanced enough to receive a rifle or a pistol they should be taught its care, mechanism and how to aim. This must be followed by short daily position and aiming drills.

In these latter drills the greatest care must be taken to see that the men take careful aim at some target, and every time the trigger is squeezed, that the aim is the correct one. Much of this practice must be joined with training in rapid loading.

These drills are essential as being habit forming, and are of value only if properly done.

Training preliminary to Small Arms Firing will include: Nomenclature of the rifle and pistol; dismounting and assembling of rifle and pistol; care of rifle and pistol; deflection and elevation correction drills, and aiming off for wind; sight setting; sighting drills; position and aiming drills; exercises in loading from belt; exercises in rapid loading, aiming and firing; tests as prescribed in Special Course C; gallery practice; estimating distances.

15. *Personal Hygiene, Camp Sanitation, and First Aid.*—The importance of personal hygiene and camp sanitation in the maintenance of health in individuals and in armies must be taught thoroughly to every officer and enlisted man. This should be done by means of lectures by medical officers and by personal admonition and explanation by line officers and by personal administration and explanations by line officers when errors in hygiene or sanitation are discovered in their commands.

All lectures and explanations should be in simple language, easily understood by the soldier. Technical or scientific terms should be avoided. Personal hygiene should be taught in the following general manner: The soldier should be impressed with the facts that the general health of a man is largely dependent upon the care which he takes of himself and which is taken of his surroundings; that it is very difficult for those in authority to maintain the proper sanitary condition of his surroundings unless he himself does his share; that nearly all diseases are caused by germs which live in the earth, food, water, excretions from the human body, on one's skin

or clothing, or on various objects which one touches; that these germs to cause disease must first enter the body, and that this entrance can be largely prevented if proper hygiene and sanitation are observed; that even if disease germs do accidentally find entrance to the body, their injurious effects may be modified or prevented when one has a sound and vigorous body.

The common rules of personal hygiene, *e. g.*, cleanliness, moderation in eating and drinking, proper exercise, sufficient sleep, care of clothing, and regularity in bowel movements should be taught in detail, and the reasons why they all have a bearing on one's health explained.

In teaching the essentials of camp sanitation, stress should be laid on the habits and breeding places of flies, mosquitoes, lice and other disease-bearing insects; and the especial danger to health of urine and feces not properly disposed of. (See Paragraphs 565 to 581, inclusive. Field Service Pocket-book, and Special Regulations, No. 28).

Instruction in the care of the foot and its coverings will be as prescribed in General Orders No. 133, War Department, October 11, 1917, and pamphlet published by the Medical Department, entitled "Minor Foot Ailments—Shoe Fittings."

Every soldier must be trained in the fundamental principles of First Aid as indicated in Paragraphs 582 to 603 inclusive, Field Service Pocket-book.

16. *Physical Training.*—Every effort should be made to develop soldiers physically, the development being such that it will render them capable of the greatest endurance on the march and on the field of battle. The requisites for a trained cavalry soldier are suppleness, skill and rapidity of movement to enable him to respond quickly to the perceptions of the senses and execute promptly the commands of his officers. He must also be endowed with great resistance to avoid fatigue and disease. For the work that will be required of the men at the front, physical strength and endurance are absolutely essential. The average man, before being trained, is unfit for the work. Physical training is more necessary than in previous wars. This result is best accomplished by a systematic and regular training of the muscles. The soldier must first be put through a series of setting-up exercises, these

to be followed by more strenuous work gradually increased, which will include marching and exercising in marching; double timing and exercises in double timing; running, vaulting and overcoming obstacles; jumping, high and broad; rope climbing; wall scaling; digging; swimming; gymnastic contests. All sports in which the combative element enters such as boxing, wrestling and foot-ball, should be strongly encouraged. The ordinary life of the soldier furnishes a certain amount of exercise but this does not accomplish the physical development that can be brought about by daily systematic exercises. Great care must be taken that physical training progresses gradually and that the soldier is not overtaxed. Too rapid progress at the beginning of his training is liable to result in permanent injury. The instructor must endeavor by every means in his power to arouse keen interest in physical training and conduct the instruction in a way which will keep the men cheerful, enthusiastic and alert.

17. *Signals.*—All cavalrymen must know the arm, whistle and battlefield signals.

All officers and non-commissioned officers must know the International Morse and semaphore code and be able to send and receive short messages under battle conditions by flag, and such other devices as are furnished for the purpose.

Ten per cent. of the enlisted men of each organization must be able to qualify in signaling as required in Paragraph 1,562, Army Regulations.

18. *Administration.*—Routine administration shall be regulated on the basis that training and preparation for active service are of first importance. Administrative duties are an essential feature of military life and are not to be neglected, but in every legitimate way they must be simplified, reduced in amount, and adjusted as to time of performance. Commanders of all grades must so order and arrange the affairs of their organizations that the foregoing general principles are given full force and effect. The number of officers and men regularly present at instruction must be the maximum consistent with the due performance of administrative or other duties unavoidably arising during the times allotted to instruction.

19. *Programs and Schedules.*—There must be definite and progressive programs and schedules of instruction. Every course of instruction should embrace certain prescribed subjects and be for a definite period in order to unify instruction, prevent unnecessary repetition, and use the available time to the best advantage.

Each commander, commencing with the troop commander, shall prepare a program based upon this plan of training, showing in general terms the contemplated scheme of work for the periods allotted for the training of his command. The purpose is to require the commander to formulate and to keep in mind a progressive plan of instruction, adapted to the particular conditions under which he is serving and framed so as (*a*) to include all the phases of training; (*b*) to give each phase its due importance, and (*c*) to combine them all in a well balanced scheme tending always toward real preparedness for field service.

The program of each unit commander is submitted to the next higher commander for approval.

A detailed schedule of training of each unit for each week will be prepared and submitted for approval to the commander of the next higher unit by noon of the Saturday of the preceding week. The schedule shall include the necessary references to the paragraphs of publications which are to be studied in preparation for the training prescribed.

Schedules shall be prepared personally by the officer responsible for the training. Such assistance as he may need, in the performance of this duty, he will obtain only from an officer designated to supervise the training. The schedules will, for the purpose of revision, be gone over in detail with the officer by whom prepared, by the officer to whom submitted, as soon as practicable after their receipt by the latter. Schedules will be prepared so as to show the training for a series of days, such as 1st, 2d, 3d, etc. Each schedule shall contain a statement as to whether or not the schedule of the previous week was complied with. A schedule of training, for use when the weather is too inclement to permit out-of-doors instruction, will be prepared to replace the normal schedule when necessary. Advantage will be taken of this

schedule to provide for training that is not necessarily held out-of-doors. The regimental commander will determine when this schedule will be followed.

It is not possible properly to conduct a drill or exercise without special forethought and preparation for that particular drill or exercise. Timely notice of the nature of each drill or exercise whould be given in order that leaders may have time to prepare themselves.

The officer who prepares it will mail a copy of every approved program and schedule direct to the Director, War Plans Division, General Staff, Army War College, Washington, D. C., without letter of transmittal.

20. *Standards and Tests.*—Instruction in any subject must continue until not only the instructor but also the student is confident of its mastery by the latter. For all classes of training, standards should be fixed, individuals and units being tested for the purpose of ascertaining whether or not they have attained the desired standard, and results of such tests recorded. Tests for individuals and platoons will be prepared by the troop commander, and after approval by the squadron commander, the tests will be conducted by the troop commander under the supervision of the squadron commander. Tests of troops will be prepared and conducted by the squadron commander. The tests for the headquarters, supply and machine-gun troops will be prepared and conducted by officers to be designated by the regimental commander. Tests of squadrons will be prepared and conducted by the regimental commander. When an individual or a unit does not exhibit proficiency in the tests on any subject, additional instruction on that subject will be given to such individual or unit, without retarding the progress of individuals or units that have satisfactorily passed the test.

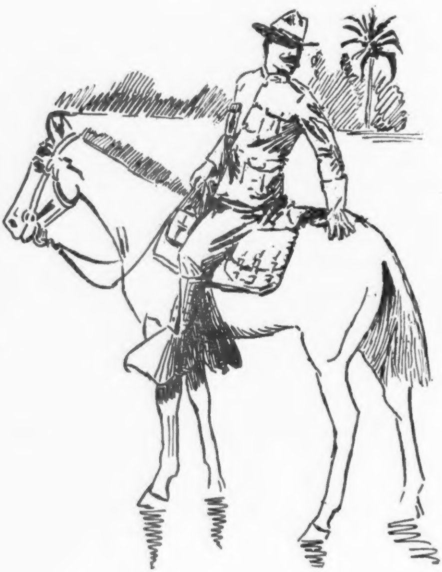
21. *Allotment of Time.*—At least 37 hours per week, exclusive of officers' and non-commissioned officers' schools, shall be devoted to training and instruction. This includes one hour for stables on Sunday.

It is contemplated that there shall be 2½ hours per day for five days of the week devoted to mounted instruction, with 2½ hours on Saturday for inspections and tests; that

there shall be six periods per week of ½ hour each for cleaning and care of arms and equipment; that there shall be seven periods per week of 1 hour each for stables and care of horses. Care of equipment will follow immediately after mounted instruction, this to be followed by stables. The foregoing covers the instruction in the morning.

In the afternoon 3 hours will be devoted to instruction each day except holidays, Wednesday, Saturdays and Sundays.

The number of hours and subjects of instruction prescribed for a course of training covering eighteen weeks, divided into seven periods.



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